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DEPARTMENT OF THE ARMY FIELD MANUAL
MARINE CORPS FLEET MARINE FORCE MANUAL

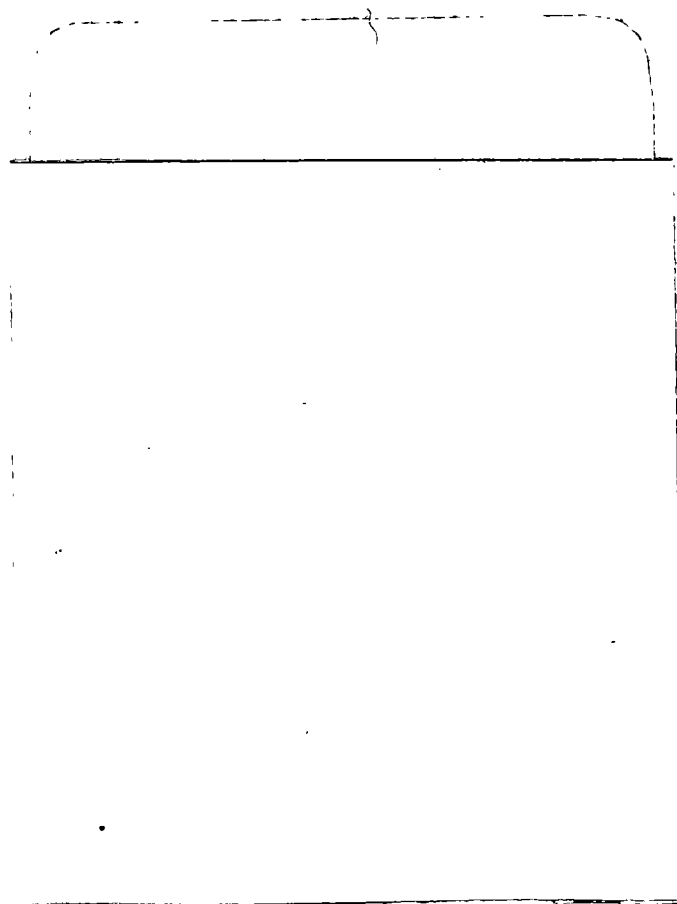
FM 101-31-3
FMFM 11-4B

**STAFF OFFICERS' FIELD MANUAL
NUCLEAR WEAPONS EMPLOYMENT
EFFECTS DATA**



JUNE 1977

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FOREWORD

This manual provides hypothetical, unclassified data for the application of nuclear target analysis as presented in FM 101-31-1/FMFM 11-4. The data presented are hypothetical and should be used only for training.

This manual represents a significant change from previous editions.

This revised version of FM 101-31-3/FMFM 11-4B (in conjunction with FM 101-31-1) contains the following major changes:

1. BASIS OF CALCULATIONS. Chapter 1 discusses the nature of the data, source, and methodology used to calculate the tabulated data.
2. REVISED FORMAT FOR COVERAGE TABLES. The tables for all casualty and safety radii for a yield of a weapon system are displayed on facing pages for comprehensive coverage prediction and consideration of safety requirements without having to turn pages.
3. ADDITIONAL PRIMARY TARGET CATEGORIES. "Protected personnel" has been divided into "personnel in open foxholes" and "personnel in tanks." Moderate damage to tanks and severe damage to artillery have been subdivided into separate categories.
4. EXPANDED EFFECTS TABLES. The effects chapter has been expanded.
5. COLLATERAL DAMAGE. Collateral damage is defined and discussed; collateral damage avoidance tables have been included.
6. SIMPLIFIED REFERENCE TABLE. A simplified reference table for casualty, safety and collateral damage is incorporated for easy reference.
7. RADIATION CASUALTY CRITERIA. Radiation casualty criteria have been changed. Also, radiation is recognized as the primary casualty producer on the battlefield. The manual emphasizes the targeting of personnel when appropriate, rather than materiel (e.g., tank crews rather than tanks).
8. SAFETY CRITERIA. The personnel risk (safety) criteria have been reevaluated and now incorporate additional considerations which have resulted in updated Safety Distance Tables.

Instructions for use of this manual and a glossary of terms used are contained in FM 101-31-1/FMFM 11-4.

Users of this manual are encouraged to submit recommendations for improving its clarity, accuracy, completeness, and ease of use. Comments should be keyed to the specific page, paragraph and line in which the change is recommended. Reasons should be provided for each comment to insure understanding and proper evaluation. Comments should be forwarded directly to the Commander, US Army Nuclear Agency, Fort Belvoir, VA 22060. Marine Corps users of this manual will submit their comments and recommendations to Commanding General, Marine Corps Development and Education Command, ATTN: Director, Development Center, Quantico, VA 22134.

FM 101-31-3*
FMFM 11-4B

DEPARTMENTS OF THE ARMY
AND THE NAVY
30 June 1977

FIELD MANUAL
No. 101-31-3

FLEET MARINE FORCE MANUAL
No. 11-4B

STAFF OFFICERS FIELD MANUAL
NUCLEAR WEAPONS EMPLOYMENT EFFECTS DATA
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*This manual supersedes FM 101-31-3/FMFM 11-4B, 15 February 1968

CHAPTER 1

CONTENTS, DATA SOURCES AND APPLICATION

1-1. **PURPOSE.** This manual is designed to be used as a teaching vehicle to train target analysts when utilization of classified reference material is not feasible. The data presented are hypothetical and should be used only for training.

1-2. **CHAPTER 1 - GENERAL.** This chapter describes the various tables and graphs presented in the manual and provides the source of data used in the calculations. Descriptions of the content, composition and sources of information are intended to add clarity as well as to provide planning guidance to users of the manual.

a. **Weapon Terminology.** The weapon terminology has been changed to include a short name which describes the weapon's effects. The short name consists of two numbers separated by a dash. The first number is the casualty radius for Immediate Transient Incapacitation to personnel in tanks, in hundreds of meters, rounded to the nearest hundred. The second number is the safety radius for negligible risk to unwarned exposed personnel, in hundreds of meters, rounded to the nearest hundred. There is no buffer distance included in the safety radius. For systems with a casualty or safety radius which varies with range, 2/3 maximum range is selected. For example, consider the medium range cannon with the 2.0 KT yield. The casualty radius for Immediate Transient Incapacitation to personnel in tanks is 636 meters. The safety radius for negligible risk to unwarned exposed personnel is 3770 meters. The weapon can therefore be referred to as a (6-38).

b. **Units of Measurement.** The metric system of units is used throughout for distances and dimensions.

c. **Yields.** Hypothetical yields are used throughout the manual. The casualty yields used are expected values of yield. The safety yields utilized for safety and collateral damage calculations represent an upper limit on yield variation, and are assumed to be the casualty yields plus 10%.

d. **Casualty Yields.** Casualty yields in kilotons used in the tabulated computations are listed below.

<u>Systems</u>	<u>Casualty Yields</u>	<u>Systems</u>	<u>Casualty Yields</u>
Short Range Cannon (W10)		Guided Missile (W30)	
Y-1	0.2	Y-1	10.0
Y-2	1.0	Y-2	50.0
		Y-3	100.0
Medium Range Cannon (W15)		ADM (W40)	
Y-1	2.0	Y-1	1.0
Y-2	8.0	Y-2	5.0
Free Flight Rocket (W20)		Bomb (B50)	
Y-1	5.0	Y-1	3.0
Y-2	20.0	Y-2	10.0
		Y-3	100.0

e. **Accuracy.** The data presented for hypothetical system accuracy are the best estimates of total system accuracy, not solely round-to-round precision.

f. **Damage Definitions for Structures.**

(1) **Severe Damage:** That degree of structural damage that precludes further use of a structure for the purpose for which it is intended without essentially complete reconstruction. Generally, collapse of the structure is implied.

(2) **Moderate Damage:** That degree of structural damage to principal load-carrying members (trusses, columns, beams and load-carrying walls) that precludes effective use of a structure for the purpose for which it was intended until major repairs are made.

(3) **Light Damage:** That degree of damage that results in broken windows, slight damage to roofing and siding, blow down of light interior partitions and slight cracking of curtain walls in buildings. Generally, structures receiving light damage can be used as intended with only minor repairs and removal of debris.

g. **Damage Definitions for Materiel.**

(1) **Moderate Damage:** Damaged, nonfunctional, repairable with special tools, skills, and parts (at least half of all subsystems, for example, engine, power-train, tracks, etc., are not functional, but are repairable).

(2) **Severe Damage:** Damaged, nonfunctional, very difficult to repair (at least one subsystem is nonfunctional and not repairable except by replacement).

h. **Personnel Radiation Casualty Criteria.**

(1) **Immediate Permanent (IP) Incapacitation:** 8,000 rad -- Personnel will become incapacitated within 5 minutes of exposure, and for physically demanding tasks they will remain incapacitated until death. Death will occur in 1-2 days. (For tasks which are not physically demanding, immediate permanent incapacitation will occur at 18,000 rad. At this radiation level, death will occur within 1 day.)

(2) **Immediate Transient (IT) Incapacitation:** 3,000 rad -- Personnel will become incapacitated within 5 minutes of exposure and will remain so for 30-45 minutes. Personnel will then partially recover but will be functionally impaired until death. Death will occur in 4-6 days.

(3) **Latent Lethality (LL):** 650 rad -- Personnel will become functionally impaired within 2 hours of exposure. Personnel may respond to medical treatment and survive this dose; however, the majority of exposed personnel will remain functionally impaired until death in several weeks.

i. **Casualty and Damage Assessment.** When assessing casualties or damage, the Coverage Tables consider only blast and nuclear radiation effects. (Thermal casualties are not included in the coverage tables because of the large variability of target response due to target element posture.) The effect having the larger radius for damage or casualties is listed. Thermal casualties are included in the Effects Tables.

j. Safety Distance Assessment. Blast, thermal radiation and nuclear radiation were considered for assessing safety distances, and the largest radius of safety was listed. The atomic demolition munitions (ADM) also consider base surge and ejecta missiles.

k. Primary Targets.

(1) Exposed Personnel. Unless otherwise stated, this term refers to personnel in the open, regardless of physical posture or uniform.

(2) Personnel in Foxholes. This term refers to personnel in 1.8 meters deep open foxholes with a 0.3 meter firing step. Nuclear radiation radii were computed using foxhole transmission factors.

(3) Personnel in Tanks. Severe damage to tanks was used to find blast radii for casualties to personnel in tanks. Nuclear radiation radii were computed using transmission factors for medium tanks. The larger of the two radii was selected for tabulation.

(4) Moderate Damage to Wheeled Vehicles. The term, wheeled vehicles, refers to 2 1/2 ton trucks and 1/4 ton vehicles other than WWII jeeps. Blast only was considered.

(5) Moderate Damage to Tanks. Data apply to light and medium tanks.

(6) Moderate Damage to Towed Artillery. Refers to light, towed artillery. Damage to heavier and self-propelled artillery can be equated to moderate damage to tanks.

1-3. CHAPTER 2 -- HYPOTHETICAL WEAPON SYSTEMS CHARACTERISTICS. This chapter provides information concerning all nuclear weapons likely to be employed on the battlefield and delivery systems, except ADM, to include yields available, fuzing considerations, employment considerations, and reaction times. The characteristics of ADM are contained in Chapter 12.

1-4. CHAPTER 3 -- PREINITIATION. This chapter gives a brief explanation of preinitiation considerations. Data are provided to assist the analyst in scheduling nuclear fires.

1-5. CHAPTERS 4-7 -- TARGET TABLES FOR LOW AIRBURSTS. These chapters consist of four types of tables for each weapon system and primary target category.

a. Coverage Tables. The three tables per weapon present the precomputed effectiveness of all tactical weapons in the form of two coverage indices. The probable minimum radius of damage, the expected radius of damage, the system accuracy data, and the low air height of burst data are also provided. For personnel, there are three casualty criteria for each weapon: Immediate Permanent Incapacitation, Immediate Transient Incapacitation, and Latent Lethality. (These criteria are defined in paragraph 1-2h.)

(1) The coverage indices are two-part numbers describing the fractions of damage to accurately located [i.e., target location error (TLE) = 0] circular area targets having uniformly distributed elements. The first decimal represents the minimum fraction of damage that will occur with a high assurance considering both horizontal and vertical delivery errors. The second decimal represents the expected fractional damage. The two significant digits in the indices are not intended to imply certitude in the precision; rather, they ensure compatibility with the other target analysis techniques.

(2) The heights of burst (HOB) tabulated in the coverage tables for weapon systems with field selectable HOB, are the greater of the fallout safe (99% assurance) HOB or the optimum HOB for the effect and target considered. For weapon systems with fixed HOB, the preset HOB is used in calculations. For yields less than 100 KT, the fallout safe HOB is computed as $30(W)^{1/3}$ meters, plus 3.5 probable errors in height. For yields greater than 100 KT, the fallout safe HOB is computed as $55(W)^{1/3}$ meters, plus 3.5 probable errors in height.

(3) Vertical dispersion is the only parameter considered in computing the probable minimum radius of damage. There is a high assurance of equaling or exceeding the probable minimum radius of damage.

(4) The expected radius of damage is the mathematical expectation, i.e., weighted mean radius.

(5) Accuracy data are provided for use with the visual and numerical target analysis methods and secondary target types.

b. Safety Distance Tables. These tables list data pertaining to troop safety, preclusion of damage, and preclusion of obstacle creation.

(1) The data for troop safety are the minimum safe distances (MSD), consisting of radii of safety plus buffer distances for very high assurance (99%) of not exceeding the specified criterion. The radii of safety alone, without buffer distances, are listed in the Effects Tables, Chapter 13, and are based on criteria in FM 101-31-1. These radii of safety can be refined by considering vertical dispersion errors. See Chapter 5, para. 5-IV-5, FM 101-31-1 for details on this procedure. Buffer distances added to the radius of safety in general equal 3.5 times the larger of the respective probable errors in range (PER) and probable errors in deflection (PED). For range independent systems, the buffer distances are equal to twice the system CEP. Buffer distances preclude the necessity of applying corrections for troop dispositions relative to the line of fire.

(2) Risk Criteria.

(a) Negligible Risk - Largest radius corresponding to 1% casualties or 2 1/2% nuisance effects.

(b) Moderate Risk - Largest radius corresponding to 2 1/2% casualties or 5% nuisance effects.

(c) Emergency Risk - 5% casualties (nuisance effects not specified).

(3) Nuclear Radiation Safety.

(a) Negligible risk - 50 rad for previously unexposed troops.

(b) Moderate risk - 70 rad for previously unexposed troops.

(c) Emergency risk - 150 rad for previously unexposed troops.

(4) Blast and thermal safety levels vary with weapon yield.

(5) The data for preclusion of damage are based on a buffer distance for high assurance (90%). The following information is provided:

(a) Fixed bridges, moderate damage. The bridge considered is the most vulnerable type likely to be encountered.

(b) Buildings, light damage. This refers to all types of buildings with residence-type windows, doors, roofs and walls. Buildings without windows or buildings especially built to withstand high overpressures and dynamic pressures or earthquakes do not fall into this category.

(c) Light aircraft in flight. Aircraft are grouped into three hardness categories. Helicopters considered are attack AH-1G (referred to as assault in tables), observation OH-6A, and OH-58, utility UH-1D/H and cargo CH-47 and CH-54A. Data are not available for USMC aircraft. The fixed wing aircraft is the observation OV-1B, but the data can be applied to any in the OV-1 and OV-10 series. Least separation distance (LSD) is the distance from the burst that aircraft must be to avoid significant degradation of the airframe or pilot performance severe enough to prevent mission accomplishment. Effects of blast, nuclear radiation, and thermal radiation were considered. When preclusion of damage to light aircraft in flight is desired, it is essential that the target analyst be aware that the radii listed are those at which neither the aircraft nor the pilot receives sufficient effects to abort the mission. It does not mean that the pilot will not receive a nuclear radiation dose of 150 rads or more. An approximation of the dose the pilot will receive can be determined from the safety radii for unwarned exposed personnel columns in the Effects Tables of Chapter 13.

(6) The data for preclusion of damage or LSD include a buffer distance for high assurance (90%). The following information is provided.

(a) Severe damage by blowdown to foliated deciduous trees.

(b) Severe damage by blowdown of coniferous trees.

(c) Fires at 50% relative humidity in Class I thin wildland kindling fuels.

(d) Fires at 50% relative humidity in Class IV thin wildland kindling fuels. Descriptions of each class of fuel are listed below in increasing difficulty of ignition:

CLASS	DESCRIPTION
I	Broadleaf and coniferous litter -- mixture of fine grass, broken leaves and duff, and thin translucent broadleaf leaves.
II	Hardwood and softwood punk in various stages of decay.
III	Cured or dead grass.
IV	Conifer needles and thick, nearly opaque, broadleaf leaves.

Radii for the two extreme cases were computed and entered in this manual.

1-6. CHAPTERS 8-11 -- TARGET TABLES FOR SURFACE BURSTS. These chapters contain abbreviated information similar to that in Chapters 4 to 7. Source for crater dimensions below is Reference 3.

a. Crater Dimensions for Surface Bursts. Crater size is dependent upon yield. For a 1 KT burst on the surface, the crater dimensions are as follows:

	<u>Dry Soil</u>	<u>Wet Soil</u>	<u>Dry Rock</u>	<u>Wet Rock</u>
Radius	19m	25m	15m	18m
Depth	9m	9m	7m	9m

For determining crater dimensions for surface bursts of yields other than 1 KT, the following equations apply.

$$\begin{array}{l} \text{Radius of Crater} \\ R_W = W_2^{1/3} R_1 \end{array} \qquad \begin{array}{l} \text{Depth of Crater} \\ H_W = W_2^{1/3} H_1 \end{array}$$

Where R_1 = Radius (in meters) of crater produced by 1 KT surface burst.

R_W = Radius (in meters) of crater produced by desired yield.

H_1 = Depth (in meters) of crater produced by 1 KT surface burst.

H_W = Depth (in meters) of crater produced by desired yield.

W_2 = Desired yield in KT.

b. Craters can be used as obstacles to enemy vehicles and equipment. The effective obstacle diameter can be obtained by multiplying the crater radius by 2.3.

1-7. CHAPTER 12 - ATOMIC DEMOLITION MUNITIONS (ADM). This chapter contains data on characteristics, reaction times, safe separation distances, and damage/casualty/safety radii tables associated with ADM.

a. Tunnel Demolition Tables were extracted from curves in Reference 3. The munition must be stemmed or tamped with at least 1 meter of sandbags, soil or water. Reliable data for severe damage to 30 meters of tunnel are not available for burst to tunnel distances (BTD) of less than 10 meters. (Burst to tunnel distance is shown on page 12-6.)

b. The bridge and pier data were obtained from Reference 3.

c. Safety radii involved consideration of five effects: blast, nuclear radiation, thermal radiation, base surge, and ejecta missiles. Only the governing radii of safety were entered in the manual.

d. Dose-distance data aid emplacement personnel in determining how much nuclear radiation is received from each exposure so that over-exposure from cumulative dosage can be avoided. An accurate and careful exposure history must be maintained for every individual who receives radiation.

e. Ejecta missile data were obtained from Reference 6. Sizes of missiles considered were 1 pound and larger.

f. Safety distance tables for light aircraft in flight include no buffer distances. Effects of nuclear radiation, thermal radiation, and blast on pilot and aircraft were considered.

g. The tree blowdown table provides distances from GZ where forests sustain moderate to severe damage.

h. The data for the crater dimension tables were extracted from cratering curves in Reference 3. Apparent crater diameters can be multiplied by 1.15 to determine obstacle size, as discussed in para. 1-6.

i. Radii of fire areas include wildland fuels and urban buildings. The data on urban buildings were taken from Reference 8.

1-8. CHAPTER 13 - WEAPON EFFECTS TABLES. This chapter contains a table for each weapon system, showing radii for casualties, damage, and safety for specific target types as a function of height of burst. The preset HOB or, in the case of range dependent systems, the computed HOB, was used. For preset fuzes, the outer pair of the seven HOB allows calculation of 99% assurance. The second and sixth HOB are 2 1/2 probable errors in height (PEH) above and below the desired HOB. These two HOB constitute the 90% vertical bracket. The third and fifth HOB are 1 PEH above and below the desired HOB. The one PEH approximates the expected vertical miss distance and should be used to obtain the radius of the RD circle used for calculating expected coverage. These two HOB constitute the 50% vertical bracket. If a weapon system has a contact option or backup fuze, the surface burst radii are provided. If a weapon system has more than one preset airburst HOB (low and high), a set of seven HOB, as described above, is listed for each preset HOB.

a. Personnel in any protected environment (except foxholes) are considered casualties when the environment receives severe blast damage. (For personnel in foxholes, only the weapon effects which directly affect the personnel are considered.) Radii of other effects were computed and only the radius of the governing effect was recorded. Earth shelters refer to any type of shelter where personnel are protected by at least one meter of earth and overhead cover.

b. Fixed bridges are two and four lane highway bridges and double track railroad girder bridges with spans of 61 meters or more. "Fixed bridges," as used here, are relatively resistant to blast in comparison to other types of bridges.

c. Radii of second degree burns to personnel in summer and winter uniforms were computed as a casualty-producing effect.

d. Preclude moderate damage radii and personnel risk distances are included. Such radii and distances were calculated using safety yields. The preclude moderate damage radii are for 50% incidence. The personnel risks are defined in FM 101-31-1. Vertical dispersion must be considered and buffer distances must be added to associate assurance with these numbers.

e. Railroad tank and flat cars were assumed to be loaded and randomly oriented.

f. Factories considered were one-story industrial buildings with steel frames, concrete or brick walls, windows, and with 25-50 ton capacity interior cranes.

g. Revetted (RVTTD) surface-to-air missiles are assumed to be in a U-shaped, man-made structure. The missiles are assumed to be in a horizontal position on their transporters with the top of the revetment extending slightly above the missile.

h. Severe Damage to Supply Depots. Supply depots are assumed to contain petroleum, oil and lubricants (POL) in 5 and 55 gallon drums; ammunition and rations in standard packages; and other items in small containers. Blast effects only are considered. Ruptured packages serve as evidence of severe damage to supply depots.

i. The exposed (EXPO) and shielded (SHLD) categories for wheeled vehicles and tracked equipment are defined as follows. Exposed equipment is subject to the dynamic pressures from the blast wave without reduction (assumed to be on a flat plane). Shielded equipment is subject to overpressures only (shielding is assumed to reduce dynamic pressures to a nonsignificant level).

1-9. CHAPTER 14 - COLLATERAL DAMAGE AVOIDANCE TABLES. This chapter contains a table for each weapon system, based on a 5% incidence of the effects shown (except thermal ignition where an incidence level cannot be predicted). The preset HOB are listed for each weapon system, or in the case of field selectable HOB, an HOB continuum is shown. For the systems with preset HOB, a total of seven HOB are tabulated for each preset HOB. These HOB are similar to those in the Effects Tables (see para. 1-8). If a weapon system has a contact option or contact backup option, surface burst radii of collateral damage avoidance are also listed. Troop safety yields were used in performing the calculations. Horizontal and vertical accuracy (buffer distances) are not included in the tabulated data and should be added commensurate with the commander's guidance. Personnel injury normally governs collateral damage constraints.

a. Personnel Injury. The radii listed for personnel injuries represent a 5% incidence of injuries requiring hospitalization. An injury requiring hospitalization for a civilian is assumed to be the same as an injury rendering a soldier combat ineffective. In addition to the 5% incidence of hospitalizing injuries, there will be an unspecified number of lesser injuries, assumed not to require hospitalization.

(1) Urban Environment. Civilians in this environment are assumed to be in the basements of one-story masonry buildings. Injuries to these civilians can occur because of either radiation or blast. The larger of the two radii (blast or radiation) is tabulated. For radiation, a 5% incidence of hospitalizing injuries will occur at an absorbed dose of 150 rad. For blast, a 5% incidence of hospitalizing injuries is assumed to occur when 5% of the buildings suffer severe damage. Thermal effects are not considered for personnel injuries inside of buildings.

(2) Rural Environment. Civilians in this environment are assumed to be in one-story wood-frame houses without basements. As discussed in the preceding paragraph, the larger radius associated with 150 rad for radiation, or 5% severe damage to buildings for blast, constitutes a 5% incidence of hospitalizing injuries. Thermal effects are not considered for civilians inside of buildings.

(3) Personnel in Open. The radii listed for this category equate to emergency risk to unwarned, exposed troops. Thermal, blast and radiation effects are all considered, and the largest of the three radii is tabulated.

b. Moderate Damage to Facilities. Radii listed are for 5% incidence of moderate damage. Fixed bridges are defined as single track railroad truss type bridges (most vulnerable). Railroad equipment is assumed to be full box cars, in a side-on orientation. Moderate damage to one-story masonry buildings is comparable to moderate damage to masonry buildings up to three stories and to POL and water storage tanks.

c. Thermal Ignition. Radii listed are the distances at which ignition (not necessarily sustained burning) is achieved. A probability of building damage cannot be associated with these radii.

1-10. CHAPTER 15 - GRAPHS AND TABLES. This chapter includes the graphs used for numerical analysis, the Comparable Target Table, the Radii of Vulnerability Table, the Transmission Factors, the Induced Radistion Table, and the MSD Modification as a Function of Previous Exposure Table.

1-11. APPENDICES. The References, Dual Fuzing Considerations, Blackout Effects of Nuclear Detonations on Radio Communications and Radar Transmission/Reception, Vulnerability of Army Tactical Equipment to EMP, and Simplified Reference Data are attached as appendices.

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CHAPTER 2
WEAPON SYSTEM CHARACTERISTICS

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CHAPTER 2

WEAPON SYSTEM CHARACTERISTICS

2-1. SHORT RANGE CANNON (W10 WARHEAD).

a. General. This paragraph contains employment data for the short range cannon system.

b. Weapon Characteristics.

(1) Yield. The cannon system can fire nuclear projectiles with the following yields:

<u>Warhead</u>	<u>Yield (KT)</u>	<u>99% Fallout Safe HOB (Range Dependent, Timer Fuze)</u>
W10Y1	0.2	36-106 meters
W10Y2	1.0	48-206 meters

(2) Fuzing. The nuclear projectiles for the short range cannon system have only an airburst fuzing capability. The projectiles are fuzed by time fuzes which are set for the desired time of flight by the delivery unit. These projectiles do not have a contact surface fuzing capability. If a projectile impacts, it can be expected to break up and dud. Actual heights of burst for optimum coverage with fallout preclusion are shown in the Coverage Tables.

(3) Preinitiation. See Chapter 3 for the necessary considerations when a multiple weapon attack is desired.

c. Employment Considerations.

(1) Range. The minimum and maximum ranges of the short range cannon system projectiles are 2,000 and 10,000 meters.

(2) Tactical System Accuracy. The system accuracy for the short range cannon system, as shown in the Coverage Tables, assumes a conditioned tube (warm, dry). The firing technique is predicted fire (MET+VE), where the meteorological data are 2 hours stale.

(3) Reaction Times. The times shown are intended primarily for use in command post exercises and during field training exercises in which handling, preparation and movement of a complete round or a delivery system are simulated. The times can also be used as a basis for general tactical planning. In situations where training or war reserve rounds and delivery units are physically present, and for detailed planning, the reaction times should be the actual times obtained from the artillery unit concerned. The times below are applicable to a reasonably well-trained unit operating in daylight under favorable weather conditions. Blackout operations, unfavorable weather, enemy interference or equipment breakdown will alter the times listed.

<u>STATES OF READINESS</u>	<u>REACTION TIMES (minutes)</u>	<u>DESCRIPTION</u>
II	20	The complete round and delivery system are in a firing position and survey is completed. Preliminary firing data for a specific target are not available. (May be used to engage target of opportunity.)
I	3	The round is positioned, fuzed and ready to fire. Firing data for a specific target have been computed and applied to the weapon system. The firing unit is in a "do not load" status awaiting the order to fire. (Typical of readiness to engage an on-call target.)

(4) Special Considerations. The target analyst needs no special information from the unit fire direction center for target analysis. The fire mission to the unit includes the desired height of burst in meters.

2-2. MEDIUM RANGE CANNON (W15 WARHEAD).

a. General. This paragraph contains employment data for the medium range cannon system.

b. Weapon Characteristics.

(1) Yield. The medium range cannon system can fire nuclear projectiles with the following yields:

<u>Warhead</u>	<u>Yield (KT)</u>	<u>99% Fallout Safe HOB (Range Dependent, Timer Fuze)</u>
W15Y1	2.0	57-214 meters
W15Y2	8.0	80-237 meters

(2) Fuzing. The nuclear projectiles for the medium range cannon system have only an airburst fuzing capability. The projectiles are fuzed by time fuzes which are set for the desired time of flight by the delivery unit. These projectiles do not have a contact surface fuzing capability. If a projectile impacts, it can be expected to break up and dud. Actual heights of burst for optimum coverage with fallout preclusion are shown in the Coverage Tables.

(3) Preinitiation. See Chapter 3 for the necessary considerations when a multiple weapon attack is desired.

c. Employment Considerations.

(1) Range. The minimum and maximum ranges of the medium range cannon system projectiles are 2,000 and 20,000 meters.

(2) Tactical System Accuracy. The system accuracy for the medium range cannon system, as shown in the Coverage Tables, assumes a conditioned tube (warm, dry). The firing technique is predicted fire (MET+VE), where the meteorological data are 2 hours stale.

(3) Reaction Times. The times shown are intended primarily for use in command post exercises and during field training exercises in which handling, preparation and movement of a complete round or a delivery system are simulated. The times can also be used as a basis for general tactical planning. In situations where training or war reserve rounds and delivery units are physically present, and for detailed planning, the reaction time should be the actual times obtained from the artillery unit concerned. The times below are applicable to a reasonably well-trained unit operating in daylight under favorable weather conditions. Blackout operations, unfavorable weather, enemy interference or equipment breakdown will alter the times listed.

STATES OF READINESS	REACTION TIMES (minutes)	DESCRIPTION
II	20	The complete round and delivery system are in a firing position, and survey is completed. Preliminary firing data for a specific target are not available. (May be used to engage target of opportunity.)
I	3	The round is positioned, fuzed and ready to fire. Firing data for a specific target have been computed and applied to the weapon system. The firing unit is in a "do not load" status awaiting the order to fire. (Typical of readiness to engage an on-call target.)

(4) Special Considerations. The target analyst needs no special information from the unit fire direction center for target analysis. The fire mission to the unit includes the desired height of burst in meters.

2.3 FREE FLIGHT ROCKET (W20 WARHEAD).

a. General. This paragraph contains employment data for the free flight rocket system.

b. Weapon Characteristics.

(1) Yield. The free flight rocket system has the following yields:

Warhead	Yield (KT)	99% Fallout Safe HOB (Range Dependent, Timer Fuze)
W20Y1	5.0	140-753 meters
W20Y2	20.0	172-784 meters

(2) Fuzing. The fuzing for the free flight rocket system provides airburst and impact fuzing options. The airburst option is fuzed with a dual mechanical timer - VT fuzing system. See Appendix B for details concerning this system. Setting the fuze for airburst precludes the use of the impact fuzing system as a backup.

(3) Preinitiation. See Chapter 3 for necessary considerations when a multiple weapon attack is desired.

c. Employment Considerations.

(1) Range. The minimum and maximum ranges of the free flight rocket are 5,000 and 60,000 meters.

(2) Tactical System Accuracy. Tactical system accuracy data are found in the Coverage Tables.

(3) Unit Carrying Capacity. A free-flight rocket unit can draw, transport, and store at any one time a total of 25 complete rounds per battalion.

(4) Reaction Times. The times shown below are intended primarily for use in command post exercises and during field training exercises in which handling, preparation and movement of a complete round or a delivery system are simulated. The times can also be used for general tactical planning. In situations where training or war reserve rounds and delivery units are physically present and for detailed tactical planning, the reaction times should be the actual times obtained from the artillery unit concerned. The times shown below are applicable to a reasonably well-trained unit operating in daylight under favorable weather conditions. Blackout operations, unfavorable weather, enemy interference, equipment breakdown or faulty test indications will extend the times listed.

<u>STATES OF READINESS</u>	<u>REACTION TIMES (minutes)</u>	<u>DESCRIPTION</u>
II	30	The complete round and launcher are in a firing position, and survey is completed. Preliminary firing data for a specific target are not available. Prefire checkouts which can be performed prior to the receipt of a fire mission have been completed. (May be used to engage targets of opportunity within range.)
I	5	Firing data for a specific target have been computed and applied to the weapon system. The unit is awaiting an order to fire. (Typical of readiness to engage on-call target.)

Remarks: For State of Readiness II, add 20 minutes if a warhead section must be removed and a new warhead section with required yield mated to rocket.

(5) Special Considerations. See Appendix B.

2-4. GUIDED MISSILE (W30 WARHEAD).

a. General. This paragraph contains employment data for the guided missile system.

b. Weapon Characteristics.

(1) Yield. The guided missile system has yields of 10.0, 50.0 and 100.0 KT.

(2) Fuzing.

(a) The fuzing for the guided missile system provides airburst and impact fuzing options. The airburst option is radar-fuzed and can be set for either high or low airburst; these are the only heights of burst available. When the fuze is set for an airburst, the system provides for an option of either contact backup or contact preclusion.

(b) The fuzes are preset at the following heights of burst:

<u>Warhead</u>	<u>Yield (KT)</u>	<u>HOB Option</u>	<u>HOB (meters)</u>	<u>PEH (meters)</u>
W30Y1	10.0	Low	242	50
		High	402	50
W30Y2	50.0	Low	289	50
		High	562	50
W30Y3	100.0	Low	439	50
		High	663	50

(3) Preinitiation. See Chapter 3 for the necessary considerations when a multiple weapon attack is desired.

c. Employment Considerations.

(1) Range. The minimum and maximum ranges of the guided missile system are 50,000 and 150,000 meters.

(2) Tactical System Accuracy. The horizontal delivery errors for the guided missile system are range independent. The CEP is 500 meters.

(3) Unit Carrying Capacity. A guided missile unit can draw, transport, and store at any one time, a total of eight complete rounds per battalion.

(4) Reaction Times. The times shown below are intended primarily for use in command post exercises and during field training exercises in which handling, preparation and movement of a complete round are simulated. They can also be used as a basis for general tactical planning. In situations where training or war reserve rounds and delivery units are physically present, and in detailed tactical planning, the reaction time should be the actual time as obtained from the artillery unit concerned. The times shown below are applicable to a reasonably well-trained unit operating in daylight under favorable weather conditions. Blackout operations, unfavorable weather, enemy interference, equipment breakdown and faulty test indications will extend the times listed.

<u>STATES OF READINESS</u>	<u>REACTION TIMES (minutes)</u>	<u>DESCRIPTION</u>
II	60	The complete missile and launcher are in a firing position and survey is completed. Preliminary firing data for a specific target are not available. Prefire checkouts which can be performed prior to receipt of a fire mission have been completed. (May be used to engage targets of opportunity.)
I	20	Firing data for specific target have been computed and applied to the weapon system. The unit is awaiting an order to fire (typical of readiness to engage an on-call target).

Remarks: For State of Readiness II, add 25 minutes if warhead section must be removed and a new warhead section with required yield mated to missile.

(5) Special Considerations. The target analyst needs no special information from the unit fire direction center for target analysis. For an airburst fuzing option, the fire mission to the unit includes the radar HOB setting, either High or Low, and whether or not contact backup or contact preclusion is desired. When contact backup is chosen, a fallout prediction is made. When an impact fuzing option is selected, the fire mission specifies HOB impact.

2-5. MK 50 BOMB.

a. This paragraph contains employment information applicable to the MK 50 Bomb delivered by Air Force, Navy, or Marine aircraft.

b. Weapon Characteristics.

(1) Yield. The MK 50 Bomb has yields of 3.0, 10.0 and 100.0 KT.

(2) Fuzing.

(a) The fuzing for the MK 50 Bomb provides airburst and impact fuzing options. The airburst option is radar fuzed and can be set for either high or low airburst; these are the only heights of burst available. Contact backup is provided in all cases where the airburst option is selected.

(b) The fuzes are preset at the following heights of burst:

<u>Warhead</u>	<u>Yield (KT)</u>	<u>HOB Option</u>	<u>HOB (meters)</u>	<u>PEH (meters)</u>
MK50Y1	3.0	Low	220	50
		High	350	50
MK50Y2	10.0	Low	242	50
		High	402	50
MK50Y3	100.0	Low	439	50
		High	663	50

(3) Preinitiation. See Chapter 3 for the necessary considerations when a multiple weapon attack is desired.

c. Employment Considerations.

(1) Tactical System Accuracy. Horizontal dispersion is dependent on the proficiency of the aircraft pilot and crew, and the technique of delivery. The CEP that can be expected for a particular mission will be obtained from the Air Force Liaison Officer. CEP of 100, 250, 500 and 750 meters are included in the Coverage Tables.

(2) Reaction Times. The times shown below are intended primarily for use in command post exercises and during field training exercises in which handling, preparation, and movement of bombs or aircraft are simulated. They can also be used as a basis for general tactical planning. In situations where training or war reserve bombs and aircraft are physically present, and in detailed tactical planning, reaction times should be the actual times obtained from the Air Force, Navy, or Marine unit concerned. The times listed below are expected times only. Such factors as distance and condition of the route to the bomb storage area, type of transportation and ground handling equipment and enemy activities may influence bomb preparation and loading.

<u>STATES OF READINESS</u>	<u>REACTION TIME (minutes)</u>	<u>DESCRIPTION</u>
II	60	Bomb is partially assembled and tested to allow shortest assembly time. The bomb is located in a storage area.
I	10	The bomb is assembled and loaded on the aircraft. The aircraft and crew are on ground alert.

Remarks:

1. In both States of Readiness, flight time must be added to the times shown.
2. Time may vary in State of Readiness II as distance from storage area to aircraft varies.

(4) Special Considerations. The target analyst coordinates closely with the Air Liaison Officer representing the delivery unit concerned. The analyst needs to know the CEP involved, because CEP varies depending on the crew assigned and the delivery technique used to attack the target. When an airburst fuzing option is selected, the fire mission specifies the desired radar HOB setting as high or low. When an impact fuzing option is selected, the fire mission specifies HOB impact.

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CHAPTER 3 PREINITIATION

3-1. GENERAL. Preinitiation is the premature commencement of fissioning in the active material of a nuclear weapon before the degree of design supercriticality is achieved, resulting in a reduced yield.

3-2. SEPARATING SUCCESSIVE NUCLEAR FIRES IN SPACE AND TIME. Preinitiation can be avoided by separating nuclear fires in space or time. The following table gives required waiting times as a function of adjusted distances between bursts, where adjusted distance is as shown in Figure 3-1.

<u>Adjusted Distance Between Bursts (meters)</u>	<u>Minimum Waiting Time (minutes)</u>
Less than 1,000	3.0
1,000 - 2,499	2.0
2,500 - 4,999	1.5
5,000 - 7,499	1.0
7,500 - 9,999	0.5
10,000 and over	0.0

Table 3-1. Minimum Waiting Times and Adjusted Distances For Successive Fires of Nuclear Weapons.

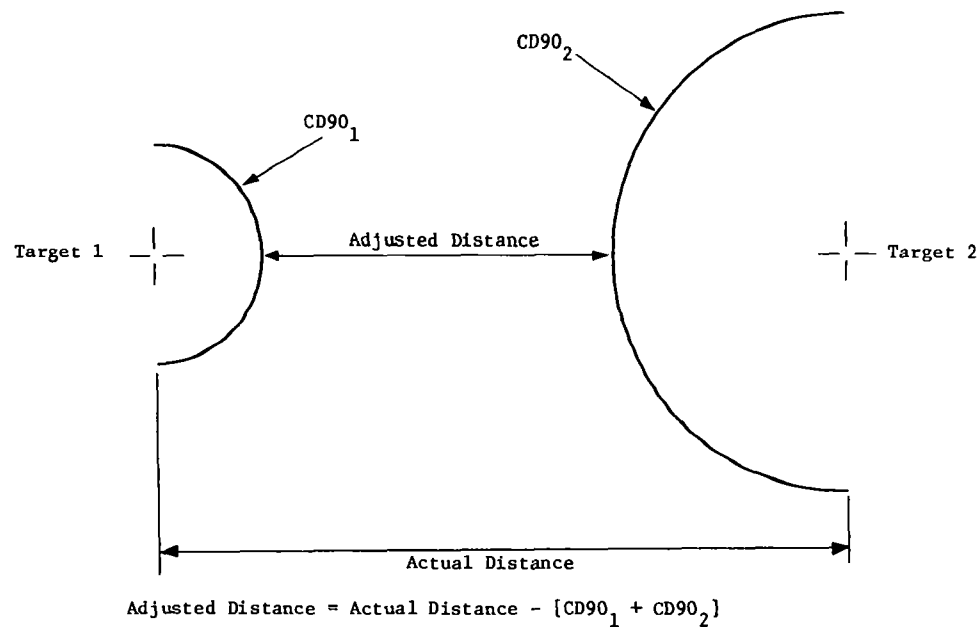


Figure 3-1. Definition of Adjusted Distance.

3-3. AVOIDING RADIOACTIVE NUCLEAR CLOUD. Preinitiation can also be avoided by not firing through the nuclear cloud of a previous burst. By detonating the most downwind and most distant weapon first, this situation should not occur. However, under certain conditions, a particular sequence of employment, etc. detonating the most downwind, and/or the most distant weapon first may not always be tactically advantageous. In situations, such as this, there is a possibility that a radioactive cloud produced by an upwind and/or less distant detonation could mask the direction of fire line for a subsequent weapon. The following procedure will be used to determine if this cloud could affect such targets.

a. Determine the masking zone. The first step is to construct the zone in which the center of the radioactive cloud must be located in order for a portion of the cloud to mask the direction of fire line.

- (1) Draw a line in the direction of fire through the target which may be affected by the radioactive cloud.
- (2) Determine the radius of the radioactive cloud produced by the upwind/less distant target. Refer to Table 3-2 for cloud radii.

<u>Yield</u>		<u>Cloud Radius (KM)</u>
<u>Greater Than</u>	<u>Equal to or Less Than</u>	
-	2 KT	1.2
2 KT	15 KT	2.7
15 KT	30 KT	3.8
30 KT	75 KT	5.5
75 KT	-	8.4

Table 3-2. Cloud Radius Versus Yield.

(3) Draw a line parallel to the direction of fire line on both sides of the direction of fire line and at a distance of one cloud radius away.

(4) The area inclosed within the cloud radius lines is the masking zone.

b. Determine the masking time interval. The second step is to determine the time interval during which the center of the drifting radioactive cloud will be in the masking zone.

(1) Draw a line from the target producing the cloud in the effective downwind direction. The effective downwind direction for the yield concerned is obtained from the chemical, biological, radiological elements (CBRE). (The CBRE determines this parameter from data provided by the division or corps field artillery meteorological section and/or the Air Force air weather service.) If, when scheduling nuclear fires, an effective downwind direction is required, the most up-to-date data should be used.

(2) Measure the distances from the target producing the radioactive cloud to the points of intersection of the cloud radius lines and the wind direction line.

(3) Determine the effective downwind speed (EDWS) in the target area for yield of the weapon producing the cloud concerned. (The CBRE determines the EDWS.)

(4) Based on the EDWS, compute the rate of cloud drift per minute. This is accomplished by dividing the EDWS by 60 minutes per hour.

(5) Divide the distance determined in (2) above by the rate of cloud drift per minute determined in (4) above.

(6) The two times calculated are the limits on the separation time interval within which masking will occur. If the separation time between detonations is in this interval, the radioactive cloud will mask, increasing the possibility of preinitiation. If this is the case, the separation time between detonations must be reduced or increased so that it is not within the masking time interval, or the sequence is impossible and the downwind, more distant target will have to be detonated first.

CHAPTER 4

COVERAGE AND SAFETY TABLES FOR LOW AIRBURST

	EXPOSED PER SONNEL	Page
Short Range Cannon	0.2 KT	4-2
Short Range Cannon	1.0 KT	4-4
Medium Range Cannon	2.0 KT	4-6
Medium Range Cannon	8.0 KT	4-8
Free Flight Rocket	5.0 KT	4-10
Free Flight Rocket	20.0 KT	4-14
Guided Missile	10.0 KT	4-18
Guided Missile	50.0 KT	4-20
Guided Missile	100.0 KT	4-22
MARK 50 Bomb	3.0 KT	4-24
MARK 50 Bomb	10.0 KT	4-24
MARK 50 Bomb	100.0 KT	4-24

SHORT RANGE CANNON

.2 KT

(3-10)

COVERAGE TABLE

(Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE PERMANENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	200	250	300	350	425	475	550	750						
2000	.95/.97	.85/.87	.70/.72	.55/.57	.40/.42	.30/.32	.20/.22	.10/.12	264	265	25	12	90	5
3000	.95/.97	.85/.87	.70/.72	.55/.57	.40/.42	.30/.32	.20/.22	.10/.12	264	264	38	19	90	8
4000	.92/.96	.85/.87	.70/.72	.55/.57	.40/.42	.30/.32	.20/.22	.10/.12	263	264	51	25	90	10
5000	.91/.95	.84/.87	.70/.72	.55/.57	.39/.42	.30/.32	.20/.22	.10/.12	262	264	64	32	90	13
6000	.91/.95	.81/.86	.70/.72	.55/.57	.38/.42	.30/.32	.20/.22	.10/.12	261	263	77	38	90	15
7000	.90/.94	.79/.85	.68/.72	.55/.57	.37/.41	.30/.32	.20/.22	.10/.12	260	263	90	45	90	18
8000	.88/.93	.77/.84	.66/.71	.55/.57	.36/.41	.30/.32	.20/.22	.10/.12	259	262	102	51	90	20
9000	.85/.91	.75/.82	.64/.70	.52/.56	.36/.40	.30/.32	.20/.22	.10/.12	255	261	116	58	99	23
10000	.82/.90	.72/.81	.61/.69	.51/.56	.36/.40	.30/.32	.20/.22	.10/.12	251	259	128	64	106	25

COVERAGE TABLE

(Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	300	375	400	500	550	625	750	950						
2000	.90/.92	.80/.82	.73/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	354	355	25	12	90	5
3000	.90/.92	.80/.82	.72/.76	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	354	354	38	19	90	8
4000	.90/.92	.80/.82	.72/.76	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	353	354	51	25	90	10
5000	.90/.92	.80/.82	.71/.75	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	352	354	64	32	90	13
6000	.90/.92	.78/.81	.71/.75	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	351	354	77	38	90	15
7000	.90/.92	.76/.81	.71/.75	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	350	353	90	45	90	18
8000	.88/.91	.75/.80	.70/.74	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	349	352	102	51	90	20
9000	.86/.91	.74/.79	.69/.74	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	347	352	116	58	99	23
10000	.85/.90	.72/.78	.67/.73	.49/.52	.40/.42	.30/.32	.20/.22	.10/.12	348	351	128	64	106	25

COVERAGE TABLE (Distances in meters)

SHORT RANGE CANNON **.2 KT** **(3-10)**

EXPOSED PERSONNEL - LATENT LETHALITY **LOW AIRBURST**

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
RANGE	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	400	500	575	725	800	900	1100	1400						
2000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	515	516	25	12	90	5
3000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	514	516	38	19	90	8
4000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	513	515	51	25	90	10
5000	.94/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	511	515	64	32	90	13
6000	.92/.96	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	510	515	77	38	90	15
7000	.91/.96	.85/.87	.73/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	508	514	90	45	90	18
8000	.91/.95	.84/.87	.73/.76	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	507	513	102	51	90	20
9000	.91/.95	.82/.86	.72/.76	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	508	514	116	58	99	23
10000	.91/.94	.82/.86	.73/.76	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	510	513	128	64	106	25

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO BLDG	LT ACFT OBSN UTIL HEL	IN FLIGHT OV-1B ASLT HEL	FOREST BLOWDOWN DECID CONIF	WILDLAND FIRES CLASS I CLASS IV			
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	DECID	CONIF	I	IV
2000	1100	1000	800	900	900	800	800	700	600	200	1200	1300	1400	1100	500	300	800	400
3000	1100	1000	800	1000	900	800	900	800	600	200	1200	1300	1400	1100	500	300	800	400
4000	1200	1100	800	1000	900	800	900	800	700	200	1200	1300	1400	1100	500	300	800	400
5000	1200	1100	800	1000	900	800	900	800	700	200	1200	1300	1400	1100	500	300	800	400
6000	1200	1100	900	1000	1000	900	900	800	700	200	1200	1300	1400	1100	500	300	800	400
7000	1200	1100	900	1000	1000	900	1000	900	700	200	1200	1300	1400	1100	500	300	800	400
8000	1200	1100	900	1000	1000	900	1000	900	700	200	1200	1300	1400	1100	500	300	800	500
9000	1200	1100	900	1100	1000	900	1000	900	700	200	1300	1300	1400	1100	500	300	800	500
10000	1300	1200	900	1100	1000	900	1100	1000	800	200	1300	1300	1400	1100	500	300	800	500

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

SHORT RANGE CANNON 1 KT (5-24)

COVERAGE TABLE (Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE PERMANENT
LOW AIRBURST

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
RANGE	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	300	450	550	650	750	850	1000	1300						
2000	.95/.97	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	460	460	25	12	120	5
3000	.95/.97	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	460	469	38	19	120	8
4000	.95/.97	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	469	469	51	25	120	10
5000	.95/.97	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	467	469	64	32	120	13
6000	.95/.97	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	467	468	77	38	120	15
7000	.95/.97	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	465	468	90	45	120	18
8000	.95/.97	.84/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	465	467	102	51	120	20
9000	.95/.97	.82/.86	.68/.72	.50/.52	.39/.42	.30/.32	.20/.22	.10/.12	463	467	116	58	120	23
10000	.95/.97	.81/.86	.67/.71	.50/.52	.38/.42	.30/.32	.20/.22	.10/.12	462	466	128	64	120	25

COVERAGE TABLE (Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE TRANSIENT
LOW AIRBURST

EFFECTIVENESS									PROB	ACCURACY DATA				
RANGE	RADIUS OF TARGET								MIN	EXPT	CD/90	CEP	HOB	PEH
	400	600	700	850	950	1050	1300	1600	RD	RD				
2000	.95/.97	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	590	590	25	12	120	5
3000	.95/.97	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	590	590	38	19	120	8
4000	.95/.97	.85/.87	.68/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	589	590	51	25	120	10
5000	.95/.97	.84/.87	.67/.71	.48/.52	.40/.42	.30/.32	.20/.22	.10/.12	589	589	64	32	120	13
6000	.95/.97	.82/.86	.67/.71	.48/.52	.40/.42	.30/.32	.20/.22	.10/.12	588	589	77	38	120	15
7000	.95/.97	.81/.85	.66/.71	.47/.51	.38/.42	.30/.32	.20/.22	.10/.12	587	589	90	45	120	18
8000	.95/.97	.81/.85	.66/.70	.47/.51	.37/.41	.30/.32	.20/.22	.10/.12	585	588	102	51	120	20
9000	.95/.97	.81/.84	.66/.70	.46/.51	.37/.41	.30/.32	.20/.22	.10/.12	583	588	116	58	120	23
10000	.95/.97	.80/.84	.66/.70	.46/.51	.36/.41	.30/.32	.20/.22	.10/.12	582	587	128	64	120	25

COVERAGE TABLE

(Distances in meters)

SHORT RANGE CANNON

1 KT

(5-24)

EXPOSED PERSONNEL - LATENT LETHALITY
LOW AIRBURST

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
RANGE	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	600	800	900	1100	1250	1400	1700	2200						
2000	.95/.97	.85/.87	.73/.77	.51/.54	.40/.42	.30/.32	.20/.22	.10/.12	798	798	25	12	120	5
3000	.95/.97	.85/.87	.72/.76	.51/.54	.40/.42	.30/.32	.20/.22	.10/.12	797	798	38	19	120	8
4000	.95/.97	.85/.87	.72/.76	.51/.54	.40/.42	.30/.32	.20/.22	.10/.12	796	798	51	25	120	10
5000	.95/.97	.85/.87	.71/.76	.51/.55	.40/.42	.30/.32	.20/.22	.10/.12	795	797	64	32	120	13
6000	.95/.97	.85/.87	.71/.76	.51/.55	.40/.42	.30/.32	.20/.22	.10/.12	794	797	77	38	120	15
7000	.95/.97	.85/.87	.71/.76	.51/.55	.40/.42	.30/.32	.20/.22	.10/.12	793	797	90	45	120	18
8000	.95/.97	.85/.87	.71/.76	.51/.55	.40/.42	.30/.32	.20/.22	.10/.12	792	796	102	51	120	20
9000	.95/.97	.83/.87	.71/.75	.51/.55	.40/.42	.30/.32	.20/.22	.10/.12	791	796	116	58	120	23
10000	.94/.97	.82/.86	.71/.75	.51/.55	.40/.42	.30/.32	.20/.22	.10/.12	780	795	128	64	120	25

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT	FOREST BLOWDOWN DECID	WILDLAND FIRES CONIF	CLASS I	CLASS IV
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	HEL		
2000	2500	2300	1400	1400	1300	1100	1400	1300	900	400	2000	2400	2700	1800	900	600	1800
3000	2500	2300	1400	1500	1300	1100	1500	1300	900	400	2000	2400	2700	1800	900	600	1800
4000	2500	2300	1400	1500	1400	1200	1500	1300	1000	400	2100	2400	2700	1800	900	600	1800
5000	2500	2400	1400	1500	1400	1200	1500	1400	1000	400	2100	2400	2700	1800	900	600	1800
6000	2600	2400	1400	1500	1400	1200	1600	1400	1000	400	2100	2400	2700	1800	900	600	1800
7000	2600	2400	1500	1500	1400	1200	1600	1400	1000	400	2100	2400	2700	1800	900	600	1800
8000	2600	2400	1500	1600	1400	1200	1600	1400	1000	400	2100	2400	2700	1800	900	600	1800
9000	2600	2400	1500	1600	1400	1200	1600	1500	1000	400	2100	2400	2700	1800	900	600	1800
10000	2600	2400	1500	1600	1500	1300	1700	1500	1100	400	2200	2400	2700	1800	1000	700	1800

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

MEDIUM RANGE CANNON 2 KT (6-38)

COVERAGE TABLE (Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE PERMANENT
LOW AIRBURST

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
RANGE	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	500	600	700	900	1000	1150	1400	1700						
2000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	630	630	25	12	120	5
3000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	630	630	34	19	120	8
4000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	630	630	51	25	120	10
5000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	630	630	64	32	120	13
6000	.94/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	630	630	77	38	120	15
7000	.92/.96	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	630	637	90	45	120	18
8000	.91/.96	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	630	636	102	51	120	20
9000	.91/.95	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	620	636	116	58	120	23
10000	.91/.95	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	630	635	128	64	120	25
11000	.91/.94	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	620	634	141	71	130	28
12000	.91/.94	.84/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	620	633	154	77	140	30
13000	.90/.94	.82/.86	.72/.76	.48/.52	.40/.42	.30/.32	.20/.22	.10/.12	620	631	167	84	150	33
14000	.90/.93	.81/.86	.71/.76	.48/.51	.38/.42	.30/.32	.20/.22	.10/.12	610	620	180	90	160	35
15000	.90/.93	.80/.85	.70/.75	.46/.51	.38/.41	.28/.32	.18/.22	.10/.12	610	626	193	97	170	38
16000	.88/.92	.79/.85	.69/.75	.46/.51	.37/.41	.27/.31	.18/.22	.10/.12	600	624	205	103	180	40
17000	.87/.92	.77/.84	.67/.74	.45/.50	.36/.41	.27/.31	.17/.21	.10/.12	590	620	219	110	190	43
18000	.86/.91	.76/.83	.66/.73	.45/.50	.35/.40	.26/.30	.17/.21	.10/.12	590	618	231	116	190	45
19000	.84/.90	.74/.82	.64/.72	.42/.49	.35/.40	.26/.30	.16/.20	.10/.12	580	613	244	122	200	48
20000	.82/.90	.72/.81	.62/.71	.41/.48	.32/.39	.25/.29	.16/.20	.10/.12	570	610	257	128	210	50

COVERAGE TABLE (Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	600	800	900	1100	1250	1400	1700	2200						
2000	.95/.97	.85/.87	.71/.73	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	796	796	25	12	120	5
3000	.95/.97	.85/.87	.71/.73	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	796	796	34	19	120	8
4000	.95/.97	.85/.87	.71/.74	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	796	796	51	25	120	10
5000	.95/.97	.85/.87	.71/.73	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	796	795	64	32	120	13
6000	.95/.97	.85/.87	.71/.73	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	796	795	77	38	120	15
7000	.95/.97	.85/.87	.71/.74	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	796	794	90	45	120	18
8000	.95/.97	.84/.87	.71/.73	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	796	794	102	51	120	20
9000	.95/.97	.82/.86	.71/.73	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	796	793	116	58	120	23
10000	.94/.97	.82/.86	.71/.74	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	789	793	128	64	120	25
11000	.93/.96	.81/.86	.71/.73	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	789	793	141	71	130	28
12000	.92/.96	.81/.85	.71/.73	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	786	793	154	77	140	30
13000	.92/.96	.81/.85	.70/.73	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	787	793	167	84	150	33
14000	.91/.95	.80/.84	.70/.73	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	787	791	180	90	160	35
15000	.91/.95	.80/.84	.70/.73	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	779	790	193	97	170	38
16000	.91/.95	.78/.83	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	773	788	205	103	180	40
17000	.91/.94	.77/.83	.68/.72	.50/.52	.39/.42	.30/.32	.20/.22	.10/.12	773	786	219	110	190	43
18000	.90/.94	.76/.82	.68/.72	.50/.52	.37/.41	.30/.32	.20/.22	.10/.12	769	784	231	116	190	45
19000	.90/.94	.76/.81	.66/.71	.48/.51	.37/.41	.30/.32	.20/.22	.10/.12	763	782	244	122	200	48
20000	.90/.93	.75/.81	.66/.71	.47/.51	.36/.41	.28/.32	.20/.22	.10/.12	755	778	257	128	210	50

COVERAGE TABLE

(Distances in meters)

MEDIUM RANGE CANNON

2 KT

(6-38)

EXPOSED PERSONNEL - LATENT LETHALITY

LOW AIRBURST

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
RANGE	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	800	1000	1200	1500	1700	1900	2200	2900						
2000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	1064	1065	25	12	120	5
3000	.95/.97	.85/.87	.72/.76	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	1063	1065	34	19	120	4
4000	.95/.97	.85/.87	.72/.76	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	1063	1065	51	25	120	10
5000	.95/.97	.85/.87	.71/.76	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	1063	1064	64	32	120	15
6000	.95/.97	.85/.87	.71/.76	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	1059	1064	77	38	120	15
7000	.95/.97	.85/.87	.71/.76	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	1057	1063	90	45	120	14
8000	.95/.97	.85/.87	.71/.76	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	1056	1063	102	51	120	20
9000	.95/.97	.85/.87	.71/.76	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	1054	1062	116	58	120	23
10000	.95/.97	.85/.87	.71/.76	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	1054	1063	128	64	127	25
11000	.95/.97	.85/.87	.72/.76	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	1053	1063	141	71	138	24
12000	.95/.97	.85/.87	.72/.76	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	1054	1063	154	77	145	30
13000	.95/.97	.85/.87	.72/.76	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	1054	1062	167	84	153	33
14000	.94/.97	.85/.87	.72/.76	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	1055	1062	180	93	162	35
15000	.93/.96	.85/.87	.71/.75	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	1054	1061	193	97	173	34
16000	.92/.96	.85/.87	.71/.75	.50/.52	.39/.42	.30/.32	.20/.22	.10/.12	1049	1060	205	103	180	40
17000	.92/.96	.85/.87	.71/.75	.50/.52	.37/.41	.30/.32	.20/.22	.10/.12	1044	1059	219	110	190	43
18000	.92/.96	.85/.87	.71/.75	.50/.52	.37/.41	.30/.32	.20/.22	.10/.12	1039	1058	231	116	197	45
19000	.91/.95	.85/.87	.71/.74	.50/.52	.37/.41	.30/.32	.20/.22	.10/.12	1039	1055	244	122	208	44
20000	.91/.95	.83/.87	.70/.74	.48/.52	.37/.41	.30/.32	.20/.22	.10/.12	1034	1054	257	128	215	50

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM	LT DAM	LT ACFT	IN FLIGHT	OV-1B		FOREST	WILDLAND FIRES	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	FIXED BRG	TO BLDG	UTIL HEL	ASLT HEL	CARGO HEL	DECID	CONIF	CLASS I	CLASS IV
2000	3900	3600	2300	2300	2100	1600	2100	1800	1200	600	2900	3700	4000	2700	1300	900	2900	1800
3000	3900	3600	2300	2300	2100	1600	2100	1900	1200	600	3000	3700	4000	2700	1400	900	2900	1800
4000	3900	3700	2300	2300	2200	1700	2100	1900	1200	600	3000	3700	4000	2700	1400	900	2900	1800
5000	3900	3700	2300	2400	2200	1700	2200	1900	1300	600	3000	3700	4000	2700	1400	900	2900	1800
6000	4000	3700	2300	2400	2200	1700	2200	2000	1300	600	3000	3700	4000	2700	1400	900	2900	1800
7000	4000	3700	2400	2400	2200	1700	2200	2000	1300	600	3000	3700	4000	2700	1400	900	2900	1800
8000	4000	3700	2400	2400	2200	1800	2300	2000	1300	600	3000	3700	4000	2700	1400	900	2900	1800
9000	4000	3800	2400	2500	2300	1800	2300	2100	1400	600	3100	3700	4000	2700	1400	900	2900	1800
10000	4000	3800	2400	2500	2300	1800	2400	2100	1400	600	3100	3700	4000	2700	1400	900	2900	1800
11000	4100	3800	2400	2500	2300	1800	2400	2200	1400	600	3200	3700	4000	2700	1500	1000	2900	1800
12000	4100	3800	2500	2500	2300	1800	2500	2200	1400	600	3200	3700	4000	2700	1500	1000	2900	1800
13000	4100	3800	2500	2500	2400	1900	2600	2300	1400	600	3300	3700	4000	2700	1500	1000	2900	1800
14000	4100	3900	2500	2600	2400	1900	2600	2300	1500	600	3400	3700	4000	2700	1500	1100	2900	1800
15000	4100	3900	2500	2600	2400	1900	2700	2400	1500	700	3400	3700	4000	2700	1500	1100	2900	1800
16000	4200	3900	2600	2600	2400	1900	2700	2400	1500	700	3500	3700	4000	2700	1500	1100	2900	1800
17000	4200	3900	2600	2600	2400	1900	2800	2500	1500	700	3500	3700	4000	2700	1500	1100	2900	1800
18000	4200	4000	2600	2600	2500	2000	2800	2500	1500	700	3600	3700	4000	2700	1500	1200	2900	1800
19000	4200	4000	2600	2700	2500	2000	2900	2600	1600	700	3600	3700	4000	2700	1500	1200	2900	1800
20000	4300	4000	2600	2700	2500	2000	2900	2600	1600	700	3700	3700	4000	2700	1500	1200	2900	1800

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

MEDIUM RANGE CANNON 8 KT (9-74)

COVERAGE TABLE (Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE PERMANENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB	ACCURACY DATA				
	RADIUS OF TARGET								MIN	EXPT				
	800	1000	1100	1300	1450	1650	2100	2800	RD	RD	CD/90	CEP	HOB	PEH
2000	.90/.92	.80/.82	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	932	931	25	12	150	5
3000	.90/.92	.80/.82	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	931	931	38	19	150	8
4000	.90/.92	.80/.82	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	930	931	51	25	150	10
5000	.90/.92	.77/.81	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	929	930	64	32	150	13
6000	.90/.92	.77/.81	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	929	930	77	38	150	15
7000	.90/.92	.76/.80	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	927	930	90	45	150	18
8000	.90/.92	.76/.80	.69/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	926	929	102	51	150	20
9000	.90/.92	.76/.80	.68/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	925	928	116	58	150	23
10000	.90/.92	.76/.80	.67/.71	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	924	928	128	64	150	25
11000	.90/.92	.76/.80	.66/.71	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	918	927	141	71	160	28
12000	.90/.92	.76/.79	.66/.71	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	914	926	154	77	167	30
13000	.90/.92	.76/.79	.66/.70	.50/.52	.40/.42	.30/.32	.18/.22	.10/.12	914	924	167	84	177	33
14000	.90/.92	.75/.78	.66/.70	.50/.52	.40/.42	.30/.32	.17/.21	.10/.12	910	922	180	90	184	35
15000	.90/.92	.75/.78	.65/.69	.50/.52	.40/.42	.30/.32	.16/.21	.10/.12	903	919	193	97	195	38
16000	.90/.92	.75/.76	.65/.69	.48/.52	.40/.42	.30/.32	.16/.21	.10/.12	898	917	205	103	202	40
17000	.89/.92	.74/.77	.65/.68	.48/.52	.38/.42	.30/.32	.16/.20	.10/.12	890	913	219	110	212	43
18000	.87/.91	.72/.77	.65/.68	.47/.51	.37/.41	.28/.32	.16/.20	.10/.12	885	911	231	116	219	45
19000	.86/.91	.72/.76	.62/.67	.46/.51	.37/.41	.28/.32	.16/.20	.10/.12	875	906	244	122	230	48
20000	.86/.91	.70/.76	.61/.67	.45/.50	.36/.40	.27/.31	.16/.19	.10/.12	869	902	257	128	237	50

COVERAGE TABLE (Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	1000	1150	1300	1600	1750	2050	2400	2750						
2000	.90/.92	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1137	1136	25	12	150	5
3000	.90/.92	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1136	1136	38	19	150	8
4000	.90/.92	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1136	1136	51	25	150	10
5000	.90/.92	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1135	1136	64	32	150	13
6000	.90/.92	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1134	1135	77	38	150	15
7000	.90/.92	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1132	1135	90	45	150	18
8000	.90/.92	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1130	1134	102	51	150	20
9000	.90/.92	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1128	1133	116	58	150	23
10000	.90/.92	.83/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1126	1133	128	64	150	25
11000	.90/.92	.83/.86	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1127	1132	141	71	160	28
12000	.90/.92	.82/.86	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1125	1132	154	77	167	30
13000	.90/.92	.82/.86	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1120	1130	167	84	177	33
14000	.90/.92	.81/.85	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1116	1129	180	90	184	35
15000	.90/.92	.81/.85	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1115	1127	193	97	195	38
16000	.90/.92	.81/.84	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1112	1126	205	103	202	40
17000	.90/.92	.80/.84	.70/.72	.48/.52	.40/.42	.30/.32	.20/.22	.15/.17	1106	1123	219	110	212	43
18000	.90/.92	.80/.84	.70/.72	.48/.52	.40/.42	.30/.32	.20/.22	.15/.17	1101	1121	231	116	219	45
19000	.89/.92	.79/.83	.68/.72	.47/.51	.40/.42	.28/.32	.20/.22	.15/.17	1094	1117	244	122	230	48
20000	.87/.91	.78/.83	.67/.71	.47/.51	.40/.42	.28/.32	.20/.22	.15/.17	1088	1114	257	128	237	50

COVERAGE TABLE (Distances in meters)

MEDIUM RANGE CANNON **8 KT** (9-74)

EXPOSED PERSONNEL - LATENT LETHALITY **LOW AIRBURST**

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	1100	1400	1600	2050	2350	2650	3250	3800						
2000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1482	1482	25	12	150	5
3000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1481	1481	38	19	150	8
4000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1480	1481	51	25	150	10
5000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1479	1481	64	32	150	13
6000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1478	1480	77	38	150	15
7000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1476	1480	90	45	150	18
8000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1475	1479	102	51	150	20
9000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1474	1478	116	59	150	23
10000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1472	1478	128	64	150	25
11000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1474	1478	141	71	160	28
12000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1470	1478	154	77	167	30
13000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1471	1478	167	84	177	33
14000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1470	1477	180	90	184	35
15000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1465	1476	193	97	195	38
16000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1461	1475	205	103	202	40
17000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1455	1473	219	110	212	43
18000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1455	1472	231	116	219	45
19000	.95/.97	.85/.87	.75/.77	.50/.52	.38/.42	.30/.32	.20/.22	.15/.17	1453	1469	244	122	230	48
20000	.94/.97	.85/.87	.75/.77	.50/.52	.38/.42	.30/.32	.20/.22	.15/.17	1449	1466	257	129	237	50

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM BLDG	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT	FOREST BLOWDOWN DECID CONIF	WILDLAND FIRES CLASS CLASS	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	I	IV
2000	7500	6900	4500	4400	4100	3200	3500	3100	1600	1200	5100	6900	7300	5900	2500	3700
3000	7500	6900	4500	4400	4100	3300	3600	3200	1700	1200	5200	6900	7300	5900	2500	3700
4000	7500	7000	4500	4400	4100	3300	3600	3200	1700	1200	5200	6900	7300	5900	2500	3700
5000	7600	7000	4600	4500	4200	3300	3700	3300	1700	1200	5200	6900	7300	5900	2500	3700
6000	7600	7000	4600	4500	4200	3300	3700	3300	1700	1200	5200	6900	7300	5900	2500	3700
7000	7600	7000	4600	4500	4200	3400	3800	3300	1800	1200	5300	6900	7300	5900	2600	3700
8000	7600	7100	4600	4500	4200	3400	3800	3400	1800	1200	5300	6900	7300	5900	2600	3700
9000	7700	7100	4700	4600	4300	3400	3800	3400	1800	1200	5300	6900	7300	5900	2600	3700
10000	7700	7100	4700	4600	4300	3400	3900	3500	1800	1200	5300	6900	7300	5900	2600	3700
11000	7700	7100	4700	4600	4300	3500	4000	3500	1900	1200	5400	6900	7300	5900	2600	3700
12000	7700	7200	4700	4600	4300	3500	4000	3600	1900	1200	5500	6900	7300	5900	2600	3700
13000	7800	7200	4800	4700	4400	3500	4100	3700	1900	1200	5500	6900	7300	5900	2700	3700
14000	7800	7200	4800	4700	4400	3500	4200	3700	1900	1200	5600	6900	7300	5900	2700	3700
15000	7800	7200	4800	4700	4400	3600	4300	3800	2000	1200	5700	6900	7300	5900	2700	3700
16000	7800	7300	4800	4700	4400	3600	4300	3900	2000	1200	5700	6900	7300	5900	2800	3700
17000	7900	7300	4900	4800	4500	3600	4400	3900	2000	1200	5800	6900	7300	5900	2800	3700
18000	7900	7300	4900	4800	4500	3600	4500	4000	2000	1200	5900	6900	7300	5900	2800	3700
19000	7900	7300	4900	4800	4500	3700	4500	4100	2100	1200	5900	6900	7300	5900	2900	3700
20000	7900	7400	4900	4800	4500	3700	4600	4100	2100	1200	6000	6900	7300	5900	2900	3700

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

FREE FLIGHT ROCKET

5 KT
TOF < 40 SEC
(8-59)

COVERAGE TABLE (Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE PERMANENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	500	700	800	1100	1200	1400	1700	2400						
5000	.95/.97	.89/.92	.81/.86	.55/.57	.45/.47	.35/.37	.20/.22	.10/.12	813	817	204	108	140	25
7000	.95/.97	.80/.91	.78/.84	.55/.57	.45/.47	.32/.36	.20/.22	.10/.12	803	815	237	130	161	31
9000	.95/.97	.84/.90	.76/.83	.52/.56	.45/.47	.31/.35	.20/.22	.10/.12	794	809	266	147	185	38
10000	.93/.97	.82/.89	.75/.82	.51/.56	.45/.47	.31/.35	.20/.22	.10/.12	786	806	283	156	196	41
11000	.92/.96	.81/.89	.74/.81	.51/.55	.43/.46	.31/.35	.20/.22	.10/.12	778	801	295	162	206	44
12000	.91/.96	.79/.88	.72/.80	.49/.54	.41/.46	.30/.34	.20/.22	.10/.12	765	796	311	171	220	48
13000	.90/.95	.77/.87	.70/.79	.47/.53	.40/.45	.30/.34	.20/.22	.10/.12	756	791	325	179	231	51
14000	.89/.95	.76/.86	.68/.78	.46/.53	.40/.45	.28/.33	.20/.22	.10/.12	745	786	341	187	241	54
15000	.87/.94	.74/.85	.67/.77	.45/.52	.37/.44	.28/.33	.18/.22	.08/.12	733	780	355	194	252	57
16000	.86/.93	.71/.83	.64/.76	.42/.50	.35/.43	.26/.32	.17/.21	.07/.11	717	772	371	202	266	61
17000	.84/.93	.69/.82	.62/.75	.40/.50	.35/.43	.25/.32	.15/.21	.07/.11	704	765	385	209	276	64
18000	.82/.92	.67/.81	.60/.73	.40/.49	.32/.42	.25/.31	.16/.20	.07/.11	690	758	400	217	287	67
19000	.79/.91	.65/.80	.57/.72	.37/.48	.31/.41	.22/.30	.15/.20	.06/.11	675	751	414	223	297	70
20000	.76/.89	.61/.78	.54/.70	.35/.47	.30/.40	.21/.29	.15/.20	.06/.11	654	739	431	232	311	74
21000	.75/.88	.58/.76	.51/.69	.32/.45	.27/.39	.20/.29	.13/.19	.06/.10	637	730	445	239	322	77
22000	.69/.87	.55/.75	.49/.67	.30/.44	.26/.38	.20/.29	.12/.19	.06/.10	619	721	461	246	332	80
23000	.65/.85	.52/.73	.46/.66	.30/.44	.25/.37	.17/.28	.12/.19	.06/.10	600	711	475	253	343	83
24000	.60/.83	.48/.71	.42/.63	.25/.41	.21/.36	.16/.27	.10/.18	.05/.10	573	697	493	262	357	87
25000	.55/.81	.44/.69	.38/.61	.25/.41	.21/.35	.15/.26	.10/.17	.05/.09	544	682	507	269	371	91
26000	.51/.80	.41/.67	.34/.60	.21/.40	.20/.34	.12/.25	.10/.17	.03/.09	528	674	523	276	378	93
27000	.46/.78	.37/.65	.30/.58	.20/.39	.16/.32	.11/.24	.07/.16	.03/.09	504	662	538	283	388	96
28000	.40/.75	.29/.63	.25/.56	.16/.37	.16/.32	.11/.24	.06/.16	.03/.09	469	644	555	292	402	100
29000	.35/.73	.25/.61	.22/.54	.16/.36	.11/.31	.10/.23	.06/.16	.02/.08	439	631	569	298	413	103
30000	.29/.70	.20/.59	.20/.52	.11/.35	.11/.30	.06/.22	.05/.15	.02/.07	407	617	586	306	423	106
31000	.22/.68	.17/.57	.17/.50	.11/.33	.11/.28	.06/.22	.03/.14	.02/.07	373	602	600	313	434	109
32000	.10/.65	.13/.54	.13/.48	.06/.32	.06/.28	.06/.21	.03/.14	.02/.07	322	583	618	321	444	113
33000	.06/.63	.10/.52	.10/.46	.06/.31	.06/.27	.03/.19	.03/.14	.01/.07	279	567	632	328	458	116

COVERAGE TABLE (Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB	ACCURACY DATA				
	RADIUS OF TARGET								MIN	EXPT				
	650	900	1000	1350	1500	1800	2200	3100	RD	RD	CD/90	CEP	HOB	PEH
5000	.95/.97	.90/.92	.81/.86	.55/.57	.45/.47	.30/.32	.20/.22	.10/.12	1002	1008	204	108	140	25
7000	.95/.97	.87/.91	.80/.85	.55/.57	.45/.47	.30/.32	.20/.22	.10/.12	1000	1006	237	130	161	31
9000	.95/.97	.85/.91	.78/.84	.55/.57	.45/.47	.30/.32	.20/.22	.10/.12	988	1003	266	147	185	38
10000	.95/.97	.84/.90	.77/.83	.54/.57	.45/.47	.30/.32	.20/.22	.10/.12	986	1000	283	156	196	41
11000	.94/.97	.83/.89	.77/.83	.53/.56	.43/.47	.30/.32	.20/.22	.10/.12	979	996	295	162	206	44
12000	.93/.96	.82/.89	.76/.82	.51/.56	.42/.46	.30/.32	.20/.22	.10/.12	969	992	311	171	220	48
13000	.92/.96	.81/.88	.75/.81	.51/.56	.42/.46	.28/.32	.18/.22	.10/.12	961	988	325	179	231	51
14000	.91/.96	.80/.87	.74/.81	.51/.55	.41/.45	.28/.32	.18/.22	.08/.12	953	984	341	187	241	54
15000	.91/.96	.78/.87	.72/.80	.49/.55	.40/.45	.27/.31	.17/.21	.07/.11	943	980	355	194	252	57
16000	.90/.95	.77/.86	.71/.79	.47/.54	.40/.44	.26/.30	.17/.21	.07/.11	930	973	371	202	266	61
17000	.90/.95	.76/.85	.70/.78	.47/.53	.38/.44	.26/.30	.16/.21	.06/.11	921	968	385	209	276	64
18000	.88/.94	.74/.84	.68/.78	.45/.53	.37/.44	.26/.30	.16/.21	.06/.11	909	963	400	217	287	67
19000	.87/.94	.73/.83	.66/.77	.45/.52	.35/.42	.25/.29	.16/.21	.06/.11	897	957	414	223	297	70
20000	.86/.93	.71/.82	.65/.75	.42/.51	.35/.42	.25/.29	.16/.20	.06/.10	880	946	431	232	311	74
21000	.84/.92	.69/.81	.62/.74	.40/.50	.32/.41	.23/.29	.15/.19	.06/.10	867	940	445	239	322	77
22000	.82/.92	.67/.80	.61/.73	.40/.50	.32/.41	.22/.28	.15/.19	.06/.10	854	933	461	246	332	80
23000	.81/.91	.65/.79	.59/.72	.40/.49	.31/.40	.21/.28	.15/.19	.06/.09	839	925	475	253	343	83
24000	.78/.90	.62/.77	.56/.71	.35/.47	.30/.39	.20/.27	.13/.18	.06/.09	814	915	493	262	357	87
25000	.75/.89	.60/.76	.54/.69	.35/.47	.27/.38	.20/.27	.13/.18	.06/.09	797	904	507	269	371	91
26000	.73/.88	.58/.75	.52/.69	.35/.46	.26/.38	.17/.26	.12/.18	.05/.09	786	898	523	276	378	93
27000	.71/.87	.55/.74	.50/.67	.30/.45	.26/.37	.17/.26	.11/.18	.05/.09	769	889	538	283	388	96
28000	.67/.85	.52/.72	.47/.66	.30/.44	.25/.36	.16/.25	.10/.17	.05/.08	743	876	555	292	402	100
29000	.64/.84	.50/.71	.44/.64	.26/.43	.21/.35	.15/.25	.10/.17	.05/.08	723	866	569	298	413	103
30000	.61/.83	.47/.69	.43/.63	.25/.42	.21/.35	.15/.24	.10/.16	.05/.08	702	855	586	306	423	106
31000	.57/.81	.45/.68	.39/.62	.25/.41	.21/.34	.12/.24	.08/.16	.03/.08	680	844	600	313	434	109
32000	.52/.79	.39/.66	.35/.60	.21/.40	.16/.32	.11/.24	.07/.16	.03/.08	649	828	618	321	448	113
33000	.48/.78	.34/.64	.31/.58	.21/.39	.16/.32	.11/.22	.07/.16	.03/.08	624	816	632	328	458	116

FREE FLIGHT ROCKET

5 KT

COVERAGE TABLE (Distances in meters)

TOF < 40 SEC
(8-59)

EXPOSED PERSONNEL - LATENT LETHALITY
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	800	1200	1450	1800	2100	2400	2900	3900						
5000	.95/.97	.90/.92	.75/.77	.55/.57	.40/.42	.30/.32	.20/.22	.10/.12	1322	1329	204	108	141	25
7000	.95/.97	.90/.92	.75/.77	.55/.57	.40/.42	.30/.32	.20/.22	.10/.12	1321	1329	237	130	161	31
9000	.95/.97	.89/.92	.75/.77	.55/.57	.40/.42	.30/.32	.20/.22	.10/.12	1318	1327	266	147	185	38
10000	.95/.97	.88/.92	.75/.77	.55/.57	.40/.42	.30/.32	.20/.22	.10/.12	1312	1326	283	156	196	41
11000	.95/.97	.87/.91	.75/.77	.54/.57	.40/.42	.30/.32	.20/.22	.10/.12	1306	1323	295	162	206	44
12000	.95/.97	.86/.91	.75/.77	.53/.57	.40/.42	.30/.32	.20/.22	.10/.12	1304	1320	311	171	221	48
13000	.95/.97	.85/.90	.74/.77	.53/.56	.40/.42	.30/.32	.20/.22	.10/.12	1303	1318	325	179	231	51
14000	.95/.97	.84/.90	.72/.76	.52/.56	.38/.42	.30/.32	.20/.22	.10/.12	1293	1315	341	187	241	54
15000	.95/.97	.83/.90	.72/.76	.51/.56	.37/.41	.28/.32	.20/.22	.10/.12	1286	1311	355	194	252	57
16000	.95/.97	.82/.89	.71/.76	.51/.55	.37/.41	.28/.32	.20/.22	.10/.12	1276	1307	371	202	265	61
17000	.95/.97	.82/.88	.70/.75	.51/.55	.36/.40	.27/.31	.18/.22	.10/.12	1268	1303	385	209	276	64
18000	.95/.97	.81/.88	.69/.75	.50/.54	.36/.40	.27/.31	.18/.22	.10/.12	1263	1299	400	217	287	67
19000	.95/.97	.80/.87	.68/.74	.50/.54	.36/.40	.26/.31	.18/.22	.10/.12	1251	1295	414	223	297	70
20000	.94/.96	.79/.87	.67/.73	.48/.54	.35/.39	.26/.30	.17/.21	.10/.12	1239	1286	431	232	311	74
21000	.93/.96	.76/.86	.66/.73	.47/.53	.33/.39	.26/.30	.17/.21	.10/.12	1229	1281	445	239	322	77
22000	.92/.96	.77/.85	.65/.72	.46/.52	.33/.39	.26/.30	.16/.21	.10/.12	1219	1276	461	246	332	80
23000	.92/.96	.76/.85	.65/.72	.45/.52	.33/.38	.26/.30	.16/.21	.10/.12	1209	1270	475	253	343	83
24000	.91/.96	.75/.84	.62/.71	.45/.52	.32/.38	.25/.29	.16/.20	.08/.12	1194	1263	493	262	357	87
25000	.91/.95	.74/.83	.61/.70	.42/.50	.31/.38	.25/.29	.16/.20	.08/.12	1179	1255	507	269	371	91
26000	.90/.95	.73/.83	.60/.70	.42/.50	.31/.38	.25/.28	.16/.20	.07/.11	1170	1251	523	276	378	93
27000	.90/.95	.72/.82	.59/.69	.42/.50	.30/.37	.25/.28	.16/.20	.07/.11	1158	1244	538	283	389	96
28000	.88/.94	.70/.81	.57/.68	.40/.50	.30/.36	.24/.28	.15/.19	.07/.11	1141	1235	555	292	402	100
29000	.87/.94	.68/.80	.56/.67	.40/.49	.27/.36	.21/.28	.15/.19	.06/.11	1127	1228	569	298	413	103
30000	.86/.93	.67/.79	.55/.67	.37/.48	.27/.36	.21/.28	.15/.19	.06/.11	1113	1221	586	306	423	106
31000	.85/.93	.66/.79	.53/.66	.36/.48	.27/.36	.20/.27	.13/.18	.06/.11	1098	1214	600	313	434	109
32000	.85/.92	.65/.78	.52/.65	.35/.47	.26/.35	.20/.27	.13/.18	.06/.11	1077	1203	618	321	444	113
33000	.81/.92	.62/.77	.49/.64	.35/.46	.25/.34	.20/.26	.13/.18	.06/.11	1061	1195	632	328	455	116

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM	LT DAM	LT ACFT IN FLIGHT		OV-1B		FOREST		WILDLAND FIRES	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	HEL	DECID	CONIF	CLASS I	CLASS IV
5000	6300	5800	3900	3900	3700	2900	3800	3100	1800	1000	4500	5600	6000	4500	2200	1500	4500	2900	2900
7000	6300	5900	4000	3900	3700	2900	3500	3200	1800	1000	4500	5600	6000	4500	2200	1600	4500	2900	2900
9000	6300	5900	4000	4000	3700	3000	3700	3300	1800	1000	4500	5600	6000	4500	2300	1600	4500	2900	2900
10000	6400	5900	4000	4000	3700	3000	3800	3400	1900	1000	4500	5600	6000	4500	2300	1700	4500	2900	2900
11000	6400	5900	4000	4000	3700	3000	3800	3500	1900	1000	4500	5600	6000	4500	2300	1700	4500	2900	2900
12000	6400	6000	4100	4000	3800	3000	4000	3500	1900	1000	5100	5600	6000	4500	2400	1800	4500	2900	2900
13000	6400	6000	4100	4100	3800	3100	4000	3600	2000	1100	5100	5600	6000	4500	2400	1800	4500	2900	2900
14000	6500	6000	4100	4100	3800	3100	4100	3700	2000	1100	5200	5600	6000	4500	2500	1900	4500	2900	2900
15000	6500	6100	4200	4100	3900	3100	4200	3800	2000	1100	5300	5600	6000	4500	2500	1900	4500	2900	2900
16000	6500	6100	4200	4200	3900	3200	4300	3800	2000	1100	5400	5600	6000	4500	2500	1900	4500	2900	2900
17000	6600	6100	4200	4200	3900	3200	4400	3900	2100	1200	5400	5600	6000	4500	2600	2000	4500	2900	2900
18000	6600	6200	4300	4200	4000	3200	4400	4000	2100	1200	5500	5600	6000	4500	2600	2000	4500	2900	2900
19000	6600	6200	4300	4300	4000	3200	4500	4100	2100	1200	5600	5600	6000	4500	2600	2000	4500	2900	2900
20000	6700	6200	4300	4300	4000	3300	4600	4100	2200	1200	5700	5600	6000	4500	2700	2000	4500	2900	2900
21000	6700	6200	4300	4300	4100	3300	4700	4200	2200	1200	5700	5600	6000	4500	2700	2000	4500	2900	2900
22000	6700	6300	4400	4300	4100	3300	4700	4300	2200	1200	5800	5600	6000	4500	2700	2000	4500	3000	3000
23000	6800	6300	4400	4400	4100	3400	4800	4300	2300	1200	5800	5600	6000	4500	2800	2000	4500	3000	3000
24000	6800	6300	4400	4400	4100	3400	4900	4400	2300	1200	5900	5600	6000	4500	2800	2000	4500	3000	3000
25000	6800	6400	4500	4400	4200	3400	5000	4400	2300	1200	6000	5600	6000	4500	2800	2000	4500	3000	3000
26000	6800	6400	4500	4500	4200	3500	5000	4500	2400	1300	6000	5600	6000	4500	2800	2000	4500	3000	3000
27000	6900	6400	4500	4500	4200	3500	5100	4500	2400	1300	6100	5600	6000	4500	2800	2100	4500	3000	3000
28000	6900	6500	4600	4500	4300	3500	5100	4600	2400	1300	6200	5600	6000	4500	2900	2100	4500	3000	3000
29000	6900	6500	4600	4600	4300	3600	5200	4700	2400	1300	6200	5600	6000	4500	2900	2100	4500	3000	3000
30000	7000	6500	4600	4600	4300	3600	5300	4700	2500	1300	6200	5600	6000	4500	2900	2100	4500	3000	3000
31000	7000	6600	4700	4600	4400	3600	5300	4800	2500	1300	6300	5600	6000	4500	2900	2100	4500	3000	3000
32000	7000	6600	4700	4700	4400	3700	5400	4800	2500	1300	6300	5600	6000	4500	2900	2100	4500	3000	3000
33000	7100	6600	4700	4700	4400	3700	5400	4800	2600	1300	6400	5600	6000	4500	2900	2100	4500	3000	3000

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

FREE FLIGHT ROCKET

5 KT

TOF > 40 SEC
(8-59)

COVERAGE TABLE

(Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE PERMANENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB		ACCURACY DATA			
	RADIUS OF TARGET								MIN RD	EXPT RD	CD/90	CEP	90% VERTICAL	
	100	400	500	1050	1200	1400	1700	2400					BRACKET	
22000	.95/.97	.84/.93	.76/.90	.40/.51	.31/.41	.23/.30	.15/.20	.06/.11	666	747	461	246	135	432
24000	.95/.97	.81/.93	.74/.89	.41/.51	.31/.41	.24/.30	.15/.20	.06/.11	662	752	493	262	135	425
26000	.94/.97	.79/.92	.72/.88	.41/.52	.32/.41	.25/.31	.16/.20	.06/.11	662	756	523	276	135	417
28000	.92/.96	.77/.91	.70/.87	.41/.51	.32/.41	.25/.31	.16/.20	.06/.11	692	759	555	292	135	410
30000	.90/.95	.74/.90	.67/.87	.41/.51	.32/.41	.25/.31	.16/.21	.07/.11	692	762	586	306	135	402
32000	.87/.94	.71/.89	.65/.85	.40/.51	.32/.41	.25/.31	.16/.21	.07/.11	692	764	618	321	135	395
34000	.84/.94	.68/.88	.62/.84	.40/.51	.32/.41	.25/.31	.16/.21	.07/.11	692	766	649	336	135	386
36000	.80/.93	.65/.87	.59/.83	.39/.50	.32/.41	.25/.31	.16/.21	.07/.11	692	768	680	350	135	380
38000	.75/.91	.61/.86	.56/.82	.38/.50	.32/.41	.25/.31	.16/.21	.07/.11	692	769	712	366	135	371
40000	.69/.90	.57/.84	.53/.80	.37/.49	.31/.41	.25/.31	.16/.21	.07/.11	719	770	743	380	135	364
42000	.63/.89	.53/.83	.50/.79	.36/.49	.31/.41	.25/.31	.17/.21	.07/.11	719	771	775	396	135	356
44000	.56/.87	.49/.81	.46/.78	.35/.48	.31/.41	.25/.31	.17/.21	.07/.11	719	772	806	410	135	349
46000	.49/.86	.45/.80	.43/.76	.33/.48	.30/.40	.25/.31	.17/.21	.07/.11	719	773	839	426	135	341
48000	.43/.84	.41/.78	.40/.75	.32/.47	.29/.40	.25/.31	.17/.21	.07/.11	719	773	870	440	135	334
50000	.37/.82	.37/.77	.37/.73	.31/.47	.29/.40	.24/.31	.17/.21	.07/.11	719	774	902	455	135	325
52000	.31/.81	.33/.75	.34/.72	.30/.46	.28/.39	.24/.31	.17/.21	.07/.11	719	774	934	470	135	325
54000	.24/.79	.30/.73	.31/.70	.29/.45	.27/.39	.23/.31	.17/.21	.08/.12	719	775	966	485	135	325
56000	.19/.77	.26/.72	.28/.69	.28/.45	.26/.38	.23/.31	.17/.21	.08/.12	719	775	998	500	135	325
58000	.17/.76	.25/.71	.27/.68	.27/.45	.26/.38	.23/.30	.17/.21	.08/.12	719	776	1010	508	135	325
60000	.14/.75	.23/.70	.25/.67	.27/.44	.25/.38	.22/.30	.17/.21	.08/.12	719	777	1031	519	135	325

COVERAGE TABLE

(Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB		ACCURACY DATA			
	RADIUS OF TARGET								MIN RD	EXPT RD	CD/90	CEP	90% VERTICAL	
	400	650	850	1350	1500	1800	2200	3100					BRACKET	
22000	.95/.97	.86/.93	.74/.85	.45/.52	.36/.43	.25/.30	.16/.20	.06/.10	890	955	461	246	135	432
24000	.95/.97	.85/.93	.73/.85	.45/.52	.36/.43	.25/.30	.16/.20	.06/.11	887	958	493	262	135	425
26000	.94/.96	.83/.92	.72/.84	.45/.52	.37/.43	.26/.30	.16/.21	.06/.11	887	962	523	276	135	417
28000	.92/.96	.81/.92	.70/.83	.45/.52	.37/.43	.26/.30	.16/.21	.07/.11	911	964	555	292	135	410
30000	.91/.96	.80/.91	.69/.83	.45/.52	.37/.43	.26/.31	.16/.21	.07/.11	911	967	586	306	135	402
32000	.90/.95	.78/.90	.67/.82	.45/.52	.37/.43	.26/.31	.16/.21	.07/.11	911	968	618	321	135	395
34000	.88/.95	.76/.89	.66/.81	.44/.52	.37/.43	.26/.31	.16/.21	.07/.11	911	970	649	336	135	386
36000	.86/.94	.74/.89	.64/.80	.43/.51	.37/.43	.26/.31	.17/.21	.07/.11	911	971	680	350	135	380
38000	.84/.94	.71/.88	.62/.79	.43/.51	.37/.43	.26/.31	.17/.21	.07/.11	911	972	712	366	135	371
40000	.82/.93	.69/.87	.60/.78	.42/.51	.37/.43	.26/.31	.17/.21	.07/.11	932	973	743	380	135	364
42000	.79/.92	.67/.86	.59/.78	.42/.51	.37/.43	.26/.31	.17/.21	.07/.11	932	974	775	396	135	356
44000	.76/.91	.64/.85	.57/.76	.41/.50	.36/.43	.26/.31	.17/.21	.07/.11	932	974	806	410	135	349
46000	.73/.90	.62/.84	.55/.76	.41/.50	.36/.43	.26/.31	.17/.21	.07/.11	932	975	839	426	135	341
48000	.70/.89	.59/.83	.53/.74	.40/.49	.35/.42	.26/.31	.17/.21	.07/.11	932	975	870	440	135	334
50000	.66/.88	.57/.81	.51/.73	.39/.49	.35/.42	.26/.31	.17/.21	.07/.11	932	976	902	455	135	325
52000	.63/.87	.54/.80	.49/.72	.38/.49	.34/.42	.26/.31	.17/.21	.07/.11	932	976	934	470	135	325
54000	.59/.86	.51/.79	.47/.71	.37/.48	.33/.42	.26/.31	.17/.21	.07/.11	932	976	966	485	135	325
56000	.55/.85	.49/.78	.45/.70	.36/.48	.32/.41	.26/.31	.17/.21	.08/.12	932	976	998	500	135	325
58000	.53/.84	.48/.77	.44/.70	.36/.48	.32/.41	.26/.31	.17/.21	.08/.12	932	977	1010	508	135	325
60000	.51/.83	.46/.77	.43/.69	.35/.47	.32/.41	.26/.31	.17/.21	.08/.12	932	978	1031	519	135	325

FREE FLIGHT ROCKET

5 KT

COVERAGE TABLE (Distances in meters)

TOF > 40 SEC
(8-59)

EXPOSED PERSONNEL - LATENT LETHALITY
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB	ACCURACY DATA			
	RADIUS OF TARGET								MIN	EXPT	90% VERTICAL		
	700	1100	1300	1800	2100	2400	2900	3900	RD	RD	CD/90	CEP	BRACKET
22000	.95/.97	.84/.90	.75/.82	.48/.54	.36/.40	.26/.31	.17/.21	.10/.12	1244	1295	461	246	135 432
24000	.95/.97	.83/.90	.74/.81	.49/.54	.36/.40	.27/.31	.18/.22	.10/.12	1244	1297	493	262	135 425
26000	.95/.97	.82/.89	.73/.81	.49/.54	.36/.41	.27/.31	.18/.22	.10/.12	1244	1300	523	276	135 417
28000	.95/.97	.81/.89	.72/.81	.49/.54	.36/.41	.27/.31	.18/.22	.10/.12	1262	1302	555	292	135 410
30000	.94/.97	.80/.89	.71/.80	.49/.54	.36/.41	.27/.31	.19/.22	.10/.12	1262	1303	586	306	135 402
32000	.93/.96	.79/.88	.71/.80	.48/.54	.36/.41	.27/.31	.19/.22	.10/.12	1262	1304	618	321	135 395
34000	.92/.96	.78/.88	.70/.79	.48/.54	.36/.41	.28/.32	.19/.22	.10/.12	1262	1306	649	336	135 386
36000	.91/.96	.77/.87	.69/.79	.48/.54	.36/.41	.28/.32	.19/.22	.10/.12	1262	1306	680	350	135 380
38000	.91/.96	.76/.86	.67/.78	.47/.54	.37/.41	.28/.32	.20/.22	.10/.12	1262	1307	712	364	135 371
40000	.90/.95	.74/.86	.66/.77	.47/.54	.37/.41	.28/.32	.20/.22	.10/.12	1263	1307	743	380	135 364
42000	.88/.95	.73/.85	.65/.77	.47/.53	.37/.41	.28/.32	.20/.22	.10/.12	1273	1308	775	396	135 356
44000	.87/.94	.71/.84	.64/.76	.46/.53	.37/.41	.28/.32	.20/.22	.10/.12	1279	1308	806	410	135 349
46000	.85/.94	.70/.84	.63/.76	.46/.53	.36/.41	.29/.32	.20/.22	.10/.12	1279	1309	839	426	135 341
48000	.84/.93	.68/.83	.61/.75	.46/.53	.36/.41	.29/.32	.20/.22	.10/.12	1279	1309	870	440	135 334
50000	.82/.93	.67/.82	.60/.74	.46/.52	.36/.41	.29/.32	.20/.22	.10/.12	1279	1309	902	455	135 325
52000	.80/.92	.65/.81	.59/.74	.45/.52	.36/.41	.29/.32	.20/.22	.10/.12	1279	1309	934	470	135 325
54000	.78/.91	.64/.81	.58/.73	.45/.52	.36/.41	.29/.32	.20/.22	.10/.12	1279	1310	966	485	135 325
56000	.76/.91	.62/.80	.56/.72	.44/.52	.36/.41	.29/.32	.20/.22	.10/.12	1279	1310	998	500	135 325
58000	.75/.90	.61/.80	.56/.72	.44/.51	.36/.41	.29/.32	.20/.22	.10/.12	1279	1310	1010	508	135 325
60000	.74/.90	.61/.79	.55/.72	.43/.51	.36/.41	.29/.32	.20/.22	.10/.12	1279	1311	1031	519	135 325

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM BLDG	LT ACFT OBSN UTIL	IN FLIGHT			FOREST		WILDLAND FIRES	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER				ASLT	CARGO	BLOWDOWN	DECID	CONIF	CLASS I	CLASS IV
22000	6700	6300	4400	4300	4100	3300	4600	4200	2200	1200	5600	5600	6000	4500	2700	2000	4500	3000	
24000	6800	6300	4400	4400	4200	3400	4600	4200	2300	1200	5500	5600	6000	4500	2700	2000	4500	3000	
26000	6800	6400	4500	4500	4200	3500	4700	4200	2400	1300	5500	5600	6000	4500	2700	2000	4500	3000	
28000	6900	6500	4600	4500	4300	3500	4700	4300	2400	1300	5500	5600	6000	4500	2700	2100	4500	3000	
30000	7000	6500	4600	4600	4300	3600	4800	4400	2500	1300	5500	5600	6000	4500	2700	2100	4500	3000	
32000	7000	6600	4700	4700	4400	3700	4900	4400	2500	1300	5500	5600	6000	4500	2700	2100	4500	3000	
34000	7100	6700	4800	4700	4500	3700	4900	4500	2600	1300	5500	5600	6000	4500	2700	2100	4600	3000	
36000	7200	6700	4800	4800	4500	3800	5000	4500	2700	1300	5400	5600	6000	4500	2700	2100	4600	3100	
38000	7200	6800	4900	4900	4600	3800	5100	4600	2700	1300	5500	5600	6000	4500	2700	2100	4600	3100	
40000	7300	6800	4900	4900	4700	3900	5100	4700	2800	1400	5500	5600	5900	4500	2800	2200	4600	3100	
42000	7400	6900	5000	5000	4700	4000	5200	4700	2900	1400	5500	5600	6000	4500	2800	2200	4600	3100	
44000	7400	7000	5100	5000	4800	4000	5200	4800	2900	1400	5500	5600	6000	4600	2800	2200	4600	3100	
46000	7500	7000	5100	5100	4800	4100	5300	4900	3000	1400	5500	5700	6000	4600	2800	2200	4700	3100	
48000	7500	7100	5200	5200	4900	4200	5400	4900	3000	1400	5600	5700	6000	4600	2800	2200	4700	3200	
50000	7600	7200	5300	5200	5000	4200	5400	5000	3100	1400	5600	5700	6100	4600	2800	2200	4700	3200	
52000	7700	7200	5300	5300	5000	4300	5500	5000	3200	1400	5600	5700	6100	4600	2800	2300	4700	3200	
54000	7700	7300	5400	5400	5100	4400	5600	5100	3200	1400	5600	5800	6100	4600	2800	2300	4700	3200	
56000	7800	7400	5400	5400	5200	4400	5600	5200	3300	1500	5600	5800	6100	4700	2800	2300	4700	3200	
58000	7800	7400	5500	5400	5200	4400	5600	5200	3300	1500	5600	5800	6100	4700	2800	2300	4800	3200	
60000	7800	7400	5500	5500	5200	4500	5700	5200	3400	1500	5700	5800	6100	4700	2800	2300	4800	3200	

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

FREE FLIGHT ROCKET

20 KT

TOF < 40 SEC
(9-105)

COVERAGE TABLE

(Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE PERMANENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB		ACCURACY DATA			
	RADIUS OF TARGET								MIN	EXPT				
	000	800	950	1300	1450	1700	2100	2900	RD	RD	CD/90	CEP	HOB	PEH
5000	.95/.97	.90/.92	.82/.86	.55/.57	.45/.47	.30/.32	.20/.22	.10/.12	954	963	204	108	171	25
7000	.95/.97	.90/.92	.80/.83	.55/.57	.45/.47	.30/.32	.20/.22	.10/.12	952	960	237	130	192	31
9000	.95/.97	.80/.91	.78/.84	.53/.57	.42/.46	.30/.32	.20/.22	.10/.12	939	954	266	147	217	38
10000	.95/.97	.87/.91	.77/.83	.52/.56	.41/.46	.30/.32	.20/.22	.10/.12	932	951	283	156	227	41
11000	.95/.97	.80/.91	.76/.82	.51/.55	.41/.45	.30/.32	.20/.22	.10/.12	925	948	295	162	234	44
12000	.95/.97	.85/.90	.75/.82	.51/.55	.41/.45	.30/.32	.18/.22	.10/.12	915	943	311	171	252	48
13000	.92/.96	.83/.90	.74/.81	.50/.54	.40/.44	.28/.32	.18/.22	.10/.12	905	939	325	179	262	51
14000	.91/.96	.82/.89	.72/.80	.47/.54	.40/.44	.20/.32	.17/.21	.08/.12	898	934	341	187	273	54
15000	.91/.96	.81/.89	.71/.79	.47/.53	.36/.43	.27/.31	.17/.21	.08/.12	884	924	355	194	283	57
16000	.90/.95	.79/.88	.70/.78	.40/.52	.36/.43	.20/.30	.10/.21	.07/.11	875	922	371	202	297	61
17000	.89/.95	.77/.87	.68/.78	.45/.52	.36/.42	.20/.30	.10/.21	.07/.11	865	917	385	209	304	64
18000	.88/.94	.76/.86	.66/.77	.43/.51	.35/.41	.20/.30	.10/.20	.06/.11	854	911	400	217	318	67
19000	.80/.94	.75/.85	.65/.76	.42/.50	.35/.41	.20/.29	.10/.20	.06/.11	842	905	414	223	324	70
20000	.85/.93	.72/.84	.62/.74	.40/.50	.32/.41	.20/.29	.15/.19	.06/.11	826	896	431	232	343	74
21000	.85/.92	.71/.83	.61/.74	.40/.48	.32/.39	.22/.29	.15/.19	.06/.11	814	889	445	239	353	77
22000	.81/.91	.68/.82	.58/.72	.37/.48	.30/.39	.22/.28	.15/.19	.06/.11	800	882	461	246	364	80
23000	.79/.91	.60/.81	.57/.71	.36/.47	.30/.39	.21/.28	.13/.18	.06/.11	785	875	475	253	374	83
24000	.76/.90	.64/.80	.55/.70	.35/.46	.27/.38	.20/.27	.13/.18	.06/.09	766	865	493	262	388	87
25000	.74/.88	.61/.78	.52/.68	.31/.45	.25/.37	.20/.27	.11/.17	.05/.09	745	854	507	269	402	91
26000	.71/.88	.59/.77	.50/.67	.31/.44	.26/.36	.17/.26	.11/.17	.05/.09	734	846	523	276	409	93
27000	.69/.86	.56/.76	.48/.66	.31/.44	.25/.36	.17/.26	.11/.17	.05/.09	717	839	538	283	420	96
28000	.65/.85	.53/.74	.46/.64	.26/.42	.21/.34	.10/.25	.10/.16	.05/.09	693	827	555	292	434	100
29000	.64/.85	.50/.73	.43/.63	.26/.41	.21/.34	.10/.24	.10/.16	.05/.08	674	817	569	298	444	103
30000	.58/.82	.48/.71	.39/.62	.20/.41	.21/.33	.15/.24	.10/.16	.05/.08	654	806	586	306	455	106
31000	.55/.80	.45/.69	.38/.60	.21/.39	.17/.32	.12/.24	.07/.15	.05/.08	633	796	600	313	465	109
32000	.49/.78	.41/.67	.34/.58	.21/.38	.16/.32	.11/.23	.07/.15	.05/.08	604	779	618	321	479	113
33000	.45/.77	.37/.66	.30/.57	.20/.37	.16/.31	.11/.22	.07/.15	.05/.08	581	767	632	328	490	116

COVERAGE TABLE

(Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB		ACCURACY DATA			
	RADIUS OF TARGET								MIN	EXPT				
	700	1000	1250	1600	1800	2100	2600	3200	RD	RD	CD/90	CEP	HOB	PEH
5000	.95/.97	.90/.92	.78/.82	.55/.57	.40/.42	.30/.32	.20/.22	.10/.12	1165	1166	204	108	171	25
7000	.95/.97	.90/.92	.76/.81	.53/.57	.40/.42	.30/.32	.20/.22	.10/.12	1157	1166	237	130	192	31
9000	.95/.97	.90/.92	.76/.79	.51/.55	.40/.42	.30/.32	.20/.22	.10/.12	1157	1161	266	147	217	38
10000	.95/.97	.88/.92	.75/.79	.51/.55	.40/.42	.30/.32	.20/.22	.10/.12	1144	1159	283	156	227	41
11000	.95/.97	.80/.91	.75/.78	.51/.55	.40/.42	.30/.32	.18/.22	.10/.12	1134	1156	295	162	234	44
12000	.95/.97	.87/.91	.73/.78	.50/.54	.40/.42	.30/.32	.18/.22	.10/.12	1130	1152	311	171	252	48
13000	.95/.97	.80/.91	.72/.77	.50/.54	.40/.42	.28/.32	.17/.21	.10/.12	1122	1149	325	179	262	51
14000	.95/.97	.85/.90	.71/.77	.50/.54	.40/.42	.28/.32	.17/.21	.10/.12	1115	1145	341	187	273	54
15000	.95/.97	.84/.90	.70/.76	.48/.53	.38/.42	.27/.31	.16/.21	.10/.12	1107	1141	355	194	283	57
16000	.95/.97	.82/.89	.69/.76	.48/.53	.37/.41	.26/.31	.15/.21	.10/.12	1096	1135	371	202	297	61
17000	.94/.97	.82/.89	.68/.75	.46/.52	.37/.41	.26/.31	.16/.20	.10/.12	1088	1131	385	209	304	64
18000	.95/.96	.81/.88	.67/.75	.46/.52	.36/.41	.26/.31	.16/.20	.10/.12	1078	1126	400	217	318	67
19000	.92/.96	.80/.88	.66/.73	.45/.51	.36/.40	.26/.30	.16/.20	.10/.12	1063	1120	414	223	324	70
20000	.91/.96	.78/.87	.65/.73	.45/.50	.35/.40	.26/.30	.16/.19	.10/.12	1055	1113	431	232	343	74
21000	.91/.96	.77/.86	.63/.72	.42/.50	.35/.39	.25/.29	.16/.19	.10/.12	1045	1108	445	239	353	77
22000	.90/.95	.76/.86	.62/.71	.42/.49	.35/.39	.25/.29	.15/.19	.10/.12	1034	1102	461	246	364	80
23000	.90/.95	.75/.85	.61/.70	.42/.49	.32/.39	.25/.28	.15/.19	.10/.12	1022	1096	475	253	374	83
24000	.88/.94	.73/.84	.59/.70	.40/.48	.31/.38	.25/.28	.15/.18	.10/.12	1006	1088	493	262	388	87
25000	.87/.94	.71/.83	.57/.69	.37/.47	.30/.37	.21/.28	.15/.18	.08/.12	990	1079	507	269	402	91
26000	.86/.93	.70/.82	.56/.68	.37/.47	.30/.37	.21/.28	.15/.18	.08/.12	981	1074	523	276	409	93
27000	.84/.93	.68/.81	.55/.67	.36/.46	.30/.37	.21/.27	.15/.18	.08/.12	967	1067	538	283	420	96
28000	.82/.92	.66/.80	.52/.66	.36/.46	.27/.36	.20/.27	.15/.18	.08/.12	948	1057	555	292	434	100
29000	.81/.91	.64/.79	.51/.65	.35/.45	.26/.36	.20/.26	.12/.17	.07/.11	934	1049	569	298	444	103
30000	.76/.91	.62/.78	.48/.64	.32/.45	.26/.35	.18/.26	.11/.17	.07/.11	918	1041	586	306	455	106
31000	.77/.90	.60/.77	.47/.63	.31/.43	.25/.34	.17/.26	.11/.17	.07/.11	902	1033	600	313	465	109
32000	.74/.89	.57/.76	.44/.61	.30/.42	.22/.34	.17/.26	.11/.17	.06/.11	880	1019	618	321	479	113
33000	.71/.88	.55/.74	.43/.61	.30/.42	.22/.34	.16/.24	.10/.16	.06/.11	862	1010	632	328	490	116

FREE FLIGHT ROCKET

20 KT

COVERAGE TABLE (Distances in meters)

TOF < 40 SEC
(9-105)

EXPOSED PERSONNEL - LATENT LETHALITY
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	900	1400	1600	2100	2400	2700	3200	4000						
5000	.95/.97	.88/.92	.80/.82	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	1507	1510	204	108	171	25
7000	.95/.97	.87/.91	.80/.82	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	1505	1509	237	130	192	31
9000	.95/.97	.86/.90	.78/.82	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	1495	1506	266	147	217	38
10000	.95/.97	.80/.90	.77/.81	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	1495	1504	283	156	227	41
11000	.95/.97	.86/.89	.77/.81	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	1493	1503	295	162	238	44
12000	.95/.97	.85/.89	.76/.81	.50/.52	.38/.42	.30/.32	.20/.22	.10/.12	1483	1494	311	171	252	48
13000	.95/.97	.85/.88	.76/.80	.50/.52	.38/.42	.30/.32	.20/.22	.10/.12	1478	1497	325	179	262	51
14000	.95/.97	.84/.88	.76/.80	.50/.52	.37/.41	.30/.32	.20/.22	.10/.12	1472	1494	341	187	273	54
15000	.95/.97	.83/.88	.76/.79	.50/.52	.37/.41	.30/.32	.20/.22	.10/.12	1466	1491	355	194	283	57
16000	.95/.97	.82/.87	.75/.79	.50/.52	.36/.41	.30/.32	.20/.22	.10/.12	1457	1487	371	202	297	61
17000	.95/.97	.82/.87	.75/.79	.48/.52	.36/.41	.30/.32	.20/.22	.10/.12	1451	1483	385	209	308	64
18000	.95/.97	.81/.87	.74/.78	.48/.52	.36/.40	.28/.32	.20/.22	.10/.12	1443	1479	400	217	318	67
19000	.95/.97	.81/.86	.72/.78	.47/.51	.36/.40	.28/.32	.20/.22	.10/.12	1436	1475	414	223	329	70
20000	.95/.97	.80/.86	.72/.77	.47/.51	.36/.40	.27/.31	.20/.22	.10/.12	1425	1469	431	232	343	74
21000	.95/.97	.79/.85	.71/.77	.46/.50	.35/.39	.27/.31	.20/.22	.10/.12	1417	1465	445	239	353	77
22000	.95/.97	.78/.85	.70/.76	.46/.50	.35/.39	.26/.31	.20/.22	.10/.12	1409	1460	461	246	364	80
23000	.95/.97	.78/.85	.69/.76	.45/.50	.35/.39	.26/.30	.18/.22	.10/.12	1401	1456	475	253	374	83
24000	.94/.97	.77/.84	.68/.75	.45/.49	.33/.38	.26/.30	.18/.22	.10/.12	1387	1449	493	262	388	87
25000	.93/.96	.76/.83	.67/.75	.43/.49	.33/.38	.26/.30	.18/.22	.10/.12	1374	1443	507	269	402	91
26000	.93/.96	.75/.83	.66/.74	.43/.49	.33/.38	.26/.30	.17/.21	.10/.12	1368	1439	523	276	409	93
27000	.92/.96	.75/.82	.66/.74	.42/.49	.31/.37	.26/.30	.17/.21	.10/.12	1358	1434	538	283	420	96
28000	.91/.96	.75/.82	.65/.73	.41/.48	.31/.37	.25/.29	.17/.21	.10/.12	1343	1426	555	292	434	100
29000	.91/.96	.72/.81	.64/.73	.40/.47	.31/.37	.25/.29	.16/.21	.10/.12	1332	1420	569	298	444	103
30000	.91/.95	.71/.81	.62/.72	.40/.47	.30/.36	.23/.28	.16/.21	.10/.12	1321	1414	586	306	455	106
31000	.90/.95	.70/.80	.61/.71	.40/.47	.30/.36	.23/.28	.16/.21	.10/.12	1309	1408	600	313	465	109
32000	.89/.95	.69/.79	.59/.70	.37/.46	.30/.36	.23/.28	.16/.20	.10/.12	1292	1396	618	321	479	113
33000	.88/.94	.67/.78	.58/.70	.37/.46	.27/.35	.22/.28	.16/.20	.10/.12	1287	1390	632	328	490	116

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT			FOREST		WILDLAND FIRES				
RANGE	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD				EMER	BRG	BLDG	HEL	HEL	HEL	ASLT	CARGO	BLOWDOWN	DECID
5000	10900	10000	6200	5800	5400	4400	4800	4200	2000	1400	6500	9000	9300	8700	3300	2400	7100	4800			
7000	10900	10000	6200	5900	5500	4400	4800	4400	2000	1500	6600	9000	9300	8700	3400	2500	7100	4800			
9000	10900	10000	6200	5900	5500	4500	5100	4500	2100	1500	6800	9000	9300	8700	3500	2600	7100	4800			
10000	10900	10000	6200	5900	5500	4500	5100	4600	2100	1500	6900	9000	9300	8700	3500	2600	7100	4800			
11000	11000	10000	6300	5900	5500	4500	5200	4700	2100	1500	7000	9000	9300	8700	3500	2600	7100	4800			
12000	11000	10100	6300	6000	5600	4600	5300	4800	2200	1500	7100	9000	9300	8700	3600	2700	7100	4800			
13000	11000	10100	6300	6000	5600	4600	5400	4800	2200	1500	7200	9000	9300	8700	3600	2700	7100	4800			
14000	11100	10100	6400	6000	5600	4600	5500	4900	2300	1500	7200	9000	9300	8700	3700	2700	7100	4800			
15000	11100	10200	6400	6100	5700	4600	5600	5000	2300	1500	7300	9000	9300	8700	3700	2700	7100	4800			
16000	11100	10200	6400	6100	5700	4700	5700	5100	2400	1500	7400	9000	9300	8700	3800	2800	7100	4800			
17000	11100	10200	6400	6100	5700	4700	5700	5200	2400	1600	7500	9000	9300	8700	3800	2800	7100	4800			
18000	11200	10300	6500	6200	5700	4700	5800	5200	2500	1600	7600	9000	9300	8700	3800	2900	7100	4800			
19000	11200	10300	6500	6200	5800	4800	5800	5300	2500	1600	7600	9000	9300	8700	3900	2900	7100	4800			
20000	11200	10300	6500	6200	5800	4800	6000	5400	2600	1600	7700	9000	9300	8700	3900	3000	7100	4800			
21000	11300	10400	6600	6200	5800	4800	6100	5500	2600	1600	7800	9000	9300	8700	4000	3000	7100	4800			
22000	11300	10400	6600	6300	5900	4900	6200	5500	2700	1700	7900	9000	9300	8700	4000	3000	7100	4800			
23000	11300	10400	6600	6300	5900	4900	6300	5600	2700	1700	8000	9000	9300	8700	4000	3100	7100	4800			
24000	11400	10400	6700	6300	5900	4900	6400	5700	2800	1700	8100	9000	9300	8700	4000	3100	7100	4800			
25000	11400	10500	6700	6400	6000	4900	6400	5800	2800	1700	8200	9000	9300	8700	4000	3100	7100	4800			
26000	11400	10500	6700	6400	6000	5000	6500	5800	2800	1800	8200	9000	9300	8700	4100	3200	7100	4800			
27000	11500	10500	6700	6400	6000	5000	6500	5900	2900	1800	8300	9000	9300	8700	4100	3200	7100	4800			
28000	11500	10600	6800	6500	6100	5000	6700	6000	2900	1800	8400	9000	9300	8700	4200	3200	7100	4800			
29000	11500	10600	6800	6500	6100	5100	6700	6000	3000	1800	8400	9000	9300	8700	4200	3300	7100	4800			
30000	11500	10600	6800	6500	6100	5100	6800	6100	3000	1900	8500	9000	9300	8700	4300	3300	7100	4800			
31000	11600	10700	6900	6500	6100	5100	6800	6200	3100	1900	8600	9000	9300	8700	4300	3300	7100	4800			
32000	11600	10700	6900	6600	6200	5200	7000	6300	3200	1900	8700	9000	9300	8700	4400	3400	7100	4800			
33000	11600	10700	6900	6600	6200	5200	7000	6300	3200	1900	8700	9000	9300	8700	4500	3400	7100	4800			

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

FREE FLIGHT ROCKET

20 KT

TOF > 40 SEC
(9-105)

COVERAGE TABLE

(Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE PERMANENT
LOW AIRBURST

EFFECTIVENESS										PROB		ACCURACY DATA			
RANGE	RADIUS OF TARGET									MIN	EXPT	90% VERTICAL			
	400	600	800	1300	1450	1700	2100	2900	RD	RD	CD/90	CEP	BRACKET		
22000	.93/.96	.84/.93	.71/.84	.41/.49	.32/.40	.24/.29	.15/.20	.06/.11	809	894	461	246	165	482	
24000	.92/.96	.82/.92	.70/.83	.41/.50	.32/.40	.25/.29	.15/.20	.06/.11	836	899	493	262	165	475	
26000	.91/.96	.81/.92	.69/.83	.42/.50	.33/.41	.25/.30	.16/.20	.07/.11	836	903	523	276	165	467	
28000	.90/.95	.79/.91	.67/.82	.42/.50	.33/.41	.25/.30	.16/.20	.07/.11	836	907	555	292	165	460	
30000	.88/.95	.77/.90	.66/.81	.42/.50	.33/.41	.25/.30	.16/.20	.07/.11	836	910	586	306	165	452	
32000	.86/.94	.75/.89	.64/.81	.41/.50	.34/.41	.25/.30	.16/.20	.07/.11	836	912	619	321	165	445	
34000	.84/.94	.73/.89	.63/.80	.41/.49	.34/.41	.26/.31	.16/.20	.07/.11	856	914	649	336	165	436	
36000	.82/.93	.71/.88	.61/.79	.41/.49	.34/.41	.26/.31	.16/.20	.07/.11	856	916	680	350	165	430	
38000	.79/.92	.68/.87	.59/.78	.41/.49	.34/.41	.26/.31	.16/.20	.07/.11	856	918	712	366	165	421	
40000	.76/.91	.66/.86	.57/.77	.41/.49	.34/.41	.26/.31	.16/.20	.07/.11	856	919	743	380	165	414	
42000	.73/.90	.64/.85	.55/.76	.40/.49	.34/.41	.26/.31	.16/.21	.07/.11	856	920	775	396	165	406	
44000	.70/.89	.61/.84	.53/.75	.39/.48	.33/.41	.26/.31	.16/.21	.07/.11	856	921	806	410	165	399	
46000	.67/.88	.58/.82	.51/.74	.38/.48	.33/.41	.26/.31	.16/.21	.07/.11	879	922	839	426	165	391	
48000	.63/.87	.55/.81	.49/.73	.37/.47	.32/.41	.26/.31	.16/.21	.07/.11	879	922	870	440	165	384	
50000	.60/.86	.53/.80	.47/.72	.36/.47	.32/.40	.26/.31	.16/.21	.07/.11	879	923	902	455	165	375	
52000	.56/.85	.50/.79	.45/.71	.35/.47	.32/.40	.26/.31	.16/.21	.07/.11	879	923	934	470	165	369	
54000	.52/.83	.47/.78	.43/.70	.34/.46	.31/.40	.26/.30	.16/.21	.07/.11	879	924	966	485	165	365	
56000	.48/.82	.44/.76	.41/.68	.33/.46	.31/.40	.25/.30	.16/.21	.07/.11	879	924	998	500	165	365	
58000	.46/.81	.43/.76	.41/.68	.33/.46	.30/.40	.25/.30	.16/.21	.08/.12	879	925	1010	508	165	365	
60000	.44/.80	.41/.75	.39/.67	.32/.45	.30/.39	.25/.30	.16/.21	.08/.12	879	926	1031	519	165	365	

COVERAGE TABLE

(Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE TRANSIENT
LOW AIRBURST

EFFECTIVENESS									PROB	ACCURACY DATA				
RANGE	RADIUS OF TARGET								MIN	EXPT	CD/90	CEP	90% VERTICAL	
	600	900	1100	1600	1800	2100	2600	3200	RD	RD			BRACKET	
22000	.95/.97	.83/.90	.72/.81	.44/.50	.35/.40	.25/.30	.16/.19	.10/.12	1041	1112	461	246	165	482
24000	.94/.97	.82/.90	.71/.81	.44/.50	.35/.40	.25/.30	.16/.19	.10/.12	1064	1116	493	262	165	475
26000	.93/.96	.81/.89	.71/.80	.45/.51	.35/.40	.26/.30	.16/.19	.10/.12	1064	1120	523	276	165	467
28000	.92/.96	.80/.89	.70/.80	.45/.51	.35/.41	.26/.30	.16/.20	.10/.12	1064	1123	555	292	165	460
30000	.91/.96	.78/.88	.69/.79	.45/.51	.36/.41	.26/.30	.16/.20	.10/.12	1064	1125	586	306	165	452
32000	.90/.95	.77/.88	.67/.79	.45/.51	.36/.41	.26/.30	.16/.20	.10/.12	1064	1127	619	321	165	445
34000	.89/.95	.76/.87	.66/.78	.45/.51	.36/.41	.26/.31	.16/.20	.10/.12	1081	1129	649	336	165	436
36000	.87/.95	.74/.87	.65/.78	.45/.51	.36/.41	.26/.31	.16/.20	.10/.12	1081	1130	680	350	165	430
38000	.86/.94	.73/.86	.64/.77	.44/.51	.36/.41	.26/.31	.16/.21	.10/.12	1081	1132	712	366	165	421
40000	.84/.94	.71/.85	.62/.76	.44/.50	.36/.41	.26/.31	.16/.21	.10/.12	1081	1133	743	380	165	414
42000	.82/.93	.69/.84	.61/.76	.44/.50	.36/.41	.26/.31	.16/.21	.10/.12	1081	1134	775	396	165	406
44000	.80/.92	.67/.84	.60/.75	.43/.50	.36/.41	.27/.31	.16/.21	.10/.12	1081	1134	806	410	165	399
46000	.78/.92	.66/.83	.58/.74	.43/.50	.36/.41	.27/.31	.16/.21	.10/.12	1099	1135	839	426	165	391
48000	.76/.91	.64/.82	.57/.73	.42/.50	.36/.41	.27/.31	.16/.21	.10/.12	1099	1136	870	440	165	384
50000	.74/.90	.62/.81	.55/.73	.42/.49	.36/.41	.27/.31	.16/.21	.10/.12	1099	1136	902	455	165	375
52000	.71/.89	.60/.80	.54/.72	.41/.49	.35/.41	.27/.31	.16/.21	.10/.12	1099	1137	934	470	165	369
54000	.69/.88	.58/.79	.52/.71	.41/.49	.35/.41	.27/.31	.16/.21	.10/.12	1099	1137	966	485	165	365
56000	.66/.87	.56/.78	.51/.70	.40/.48	.35/.40	.26/.31	.17/.21	.10/.12	1099	1137	998	500	165	365
58000	.65/.87	.56/.78	.50/.70	.40/.48	.35/.40	.27/.31	.17/.21	.10/.12	1099	1138	1010	508	165	365
60000	.63/.86	.54/.77	.49/.69	.40/.48	.34/.40	.27/.31	.17/.21	.10/.12	1099	1139	1031	519	165	365

FREE FLIGHT ROCKET

20 KT

COVERAGE TABLE (Distances in meters)

TOF > 40 SEC
(9-105)

EXPOSED PERSONNEL - LATENT LETHALITY
LOW AIRBURST

EFFECTIVENESS									PROB	ACCURACY DATA				
RANGE	RADIUS OF TARGET								MIN	EXPT	CD/90	CEP	90% VERTICAL	
	900	1300	1500	2100	2400	2700	3200	4000	RD	RD			BRACKET	
22000	.95/.97	.84/.90	.76/.82	.46/.51	.36/.40	.27/.31	.20/.22	.10/.12	1414	1470	461	246	165	482
24000	.95/.97	.83/.90	.75/.81	.47/.51	.36/.40	.27/.31	.20/.22	.10/.12	1432	1473	493	262	165	475
26000	.95/.97	.82/.89	.75/.81	.47/.51	.36/.40	.27/.31	.20/.22	.10/.12	1432	1476	523	276	165	467
28000	.94/.97	.82/.89	.74/.81	.47/.51	.36/.40	.28/.32	.20/.22	.10/.12	1432	1478	555	292	165	460
30000	.93/.97	.81/.89	.73/.80	.47/.51	.36/.40	.28/.32	.20/.22	.10/.12	1432	1480	586	306	165	452
32000	.93/.96	.80/.88	.72/.80	.47/.51	.36/.41	.28/.32	.20/.22	.10/.12	1432	1481	618	321	165	445
34000	.92/.96	.79/.88	.71/.80	.47/.51	.36/.40	.29/.32	.20/.22	.10/.12	1445	1483	649	336	165	436
36000	.91/.96	.78/.87	.71/.79	.47/.51	.36/.40	.29/.32	.20/.22	.10/.12	1445	1484	680	350	165	430
38000	.91/.96	.77/.87	.70/.79	.47/.51	.36/.40	.29/.32	.20/.22	.10/.12	1445	1485	712	366	165	421
40000	.90/.95	.76/.86	.69/.78	.47/.51	.36/.40	.29/.32	.20/.22	.10/.12	1445	1485	743	380	165	414
42000	.89/.95	.75/.86	.68/.78	.47/.51	.36/.40	.30/.32	.20/.22	.10/.12	1445	1486	775	396	165	406
44000	.88/.95	.74/.85	.67/.77	.46/.51	.36/.41	.30/.32	.20/.22	.10/.12	1445	1487	806	410	165	399
46000	.86/.94	.73/.85	.66/.77	.46/.51	.36/.41	.30/.32	.20/.22	.10/.12	1459	1487	839	426	165	391
48000	.85/.94	.71/.84	.65/.76	.46/.51	.36/.41	.30/.32	.20/.22	.10/.12	1459	1487	870	440	165	384
50000	.84/.93	.70/.83	.64/.76	.46/.51	.36/.41	.30/.32	.20/.22	.10/.12	1459	1488	902	455	165	375
52000	.83/.93	.69/.83	.63/.75	.45/.50	.36/.41	.30/.32	.20/.22	.10/.12	1459	1488	934	470	165	369
54000	.81/.92	.68/.82	.62/.75	.45/.50	.36/.41	.30/.32	.20/.22	.10/.12	1459	1489	966	485	165	365
56000	.80/.92	.66/.81	.61/.74	.45/.50	.36/.40	.30/.32	.20/.22	.10/.12	1459	1489	998	500	165	365
58000	.79/.91	.66/.81	.60/.74	.45/.50	.36/.40	.30/.32	.20/.22	.10/.12	1459	1489	1010	508	165	365
60000	.78/.91	.65/.81	.59/.73	.44/.50	.36/.40	.30/.32	.20/.22	.10/.12	1459	1490	1031	519	165	365

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT		FOREST		WILDLAND FIRES	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	DECID	CONIF	I	IV
	11300	10400	6600	6300	5900	4900	6000	5400	2600	1600	7700	9000	9300	8700	3900	2900	7100	4800
22000	11300	10400	6600	6300	5900	4900	6100	5500	2700	1600	7700	9000	9300	8700	3900	3000	7100	4800
24000	11400	10500	6700	6400	6000	5000	6200	5500	2700	1700	7700	9000	9300	8700	3900	3000	7100	4800
26000	11500	10600	6800	6500	6100	5000	6200	5600	2800	1700	7700	9000	9300	8700	3900	3000	7100	4800
28000	11500	10600	6800	6500	6100	5100	6300	5700	2900	1700	7700	9000	9300	8700	3900	3000	7100	4800
30000	11600	10700	6900	6600	6200	5200	6300	5700	2900	1700	7700	9000	9300	8700	3900	3000	7100	4800
32000	11700	10800	7000	6600	6200	5200	6300	5700	3000	1700	7500	9000	9300	8700	3900	3000	7100	4800
34000	11700	10800	7000	6700	6300	5300	6400	5800	3000	1700	7500	9000	9300	8700	3900	3000	7100	4800
36000	11800	10900	7100	6800	6400	5300	6400	5800	3100	1700	7500	9000	9300	8700	3900	3000	7100	4800
38000	11900	10900	7200	6800	6400	5400	6500	5900	3100	1700	7500	9000	9300	8700	3900	3000	7100	4800
40000	11900	11000	7200	6900	6500	5500	6600	6000	3200	1800	7500	9000	9300	8700	3900	3000	7100	4900
42000	12000	11100	7300	7000	6500	5500	6600	6000	3300	1800	7500	9000	9300	8700	3900	3100	7100	4900
44000	12000	11100	7300	7000	6600	5600	6700	6100	3300	1800	7500	9000	9300	8700	3900	3100	7100	4900
46000	12100	11200	7400	7100	6700	5700	6700	6100	3400	1800	7500	9000	9300	8700	3900	3100	7100	4900
48000	12200	11200	7500	7100	6700	5700	6800	6200	3400	1800	7500	9000	9300	8700	3900	3100	7100	4900
50000	12200	11300	7500	7200	6800	5800	6900	6300	3500	1800	7400	9000	9300	8700	3900	3100	7100	5000
52000	12300	11400	7600	7300	6900	5800	6900	6300	3600	1900	7500	9000	9300	8700	3900	3200	7100	5000
54000	12300	11400	7600	7300	6900	5900	7000	6400	3600	1900	7500	9000	9300	8700	3900	3200	7100	5000
56000	12400	11500	7700	7300	6900	5900	7000	6400	3700	1900	7500	9000	9300	8700	3900	3200	7100	5000
58000	12400	11500	7700	7400	7000	6000	7000	6400	3700	1900	7500	9000	9300	8700	3900	3200	7100	5000
60000	12400	11500	7700	7400	7000	6000	7000	6400	3700	1900	7500	9000	9300	8700	3900	3200	7100	5000

GUIDED MISSILE

10 KT
(9-80)

COVERAGE TABLE (Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE PERMANENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	400	700	1100	1400	1600	2000	2500						
50-150 Km	.47/.85	.45/.81	.41/.71	.36/.53	.32/.40	.27/.32	.18/.22	.10/.12	870	903	911	500	242	50

COVERAGE TABLE (Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	300	600	1500	1700	2000	2400	3200						
50-150 Km	.80/.93	.75/.91	.64/.86	.42/.51	.37/.43	.30/.32	.20/.22	.10/.12	1088	1114	911	500	242	50

GUIDED MISSILE
10 KT
(9-80)

COVERAGE TABLE
(Distances in meters)

EXPOSED PERSONNEL - LATENT LETHALITY
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	200	700	1000	2000	2300	2700	3200	4000						
50-150 Km	.95/.97	.85/.94	.75/.89	.46/.53	.40/.42	.28/.32	.20/.22	.10/.12	1446	1460	911	500	242	50

SAFETY DISTANCE TABLE
(Distances in meters)

TROOP SAFETY (MSD)										----- PRECLUDE (LSD) -----									
RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT OBSN UTIL	ACFT ASLT HEL	IN FLIGHT OV-1B HEL	CARGO HEL	FOREST BLOWDOWN DECID	CONIF	WILDLAND FIRES CLASS I	CLASS IV
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	HEL	HEL			
50-150 Km	9400	8800	6100	6000	5700	4800	5700	5200	3000	1600	6300	7300	7600	6500	3300	2500		6000	4200

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

GUIDED MISSILE
50 KT
(11-159)

COVERAGE TABLE
(Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE PERMANENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	500	800	1500	1700	2000	2500	3200						
50-150 Km	.78/.92	.66/.88	.56/.80	.41/.50	.36/.41	.27/.31	.16/.21	.10/.12	1064	1094	911	500	289	50

COVERAGE TABLE
(Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	500	800	1800	2100	2400	2900	3900						
50-150 Km	.92/.96	.84/.93	.73/.89	.45/.52	.37/.41	.30/.32	.20/.22	.10/.12	1294	1320	911	500	289	50

GUIDED MISSILE

50 KT

(11-159)

COVERAGE TABLE

(Distances in meters)

EXPOSED PERSONNEL - LATENT LETHALITY

LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	800	1200	1500	2400	2700	3100	3600	4800						
50-150 Km	.90/.95	.80/.90	.71/.83	.46/.51	.38/.42	.30/.32	.20/.22	.10/.12	1670	1690	911	500	289	50

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD)										----- PRECLUDE (LSD) -----									
UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED BRG	LT DAM TO BLDG	LT ACFT OBSN UTIL HEL	IN FLIGHT OV-1B ASLT HEL	CARGO HEL	FOREST BLOWDOWN DECID	CONIF	WILDLAND FIRES CLASS CLASS I IV			
RANGE	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER										
50-150 Km	17300	16000	10200	9300	8700	7000	7800	7000	3700	2400	9400	12700	12900	12700	5100	4100	10300 6700		

GUIDED MISSILE

100 KT
(11-218)

COVERAGE TABLE
(Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE PERMANENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	400	650	1700	1900	2300	2800	3700						
50-150 Km	.80/.95	.80/.92	.71/.89	.41/.50	.35/.42	.25/.30	.16/.20	.08/.12	1138	1220	911	500	437	50

COVERAGE TABLE
(Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	500	800	1100	2000	2300	2600	3200	4100						
50-150 Km	.90/.95	.80/.92	.70/.85	.45/.51	.36/.40	.28/.32	.18/.22	.10/.12	1394	1437	911	500	437	30

GUIDED MISSILE

100 KT

(11-218)

COVERAGE TABLE

(Distances in meters)

EXPOSED PERSONNEL - LATENT LETHALITY

LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	1000	1400	1700	2600	2900	3400	4000	5200						
50-150 Km	.90/.95	.80/.90	.71/.83	.47/.51	.40/.42	.27/.31	.20/.22	.10/.12	1809	1843	911	500	437	50

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD FIXED BRG	LT DAM BLDG	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT	CARGO HEL	BLowdown DECID	FOREST CONIF	WILDLAND FIRES CLASS CLASS	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER								I	IV
50-150 Km	23300	21600	14000	12500	11600	9000	9000	9000	4500	3100	12500	16900	16900	16900	6000	5400	14500	8900

MARK 50 BOMB

COVERAGE TABLE

(Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE PERMANENT
LOW AIRBURST

		EFFECTIVENESS								PROB		ACCURACY DATA			
		RADIUS OF TARGET								MIN	EXPT				
YIELD		400	600	700	1000	1100	1300	1600	2000	RD	RD	CD/90	CEP	HOB	PEH
3 KT [7-46]		.95/.97	.86/.91	.77/.83	.45/.51	.36/.43	.26/.30	.16/.20	.10/.12	663	69P	182	100	220	50
		.77/.91	.64/.80	.58/.73	.42/.49	.36/.42	.26/.30	.16/.20	.10/.12	663	69R	455	250	220	50
		.18/.65	.23/.57	.24/.53	.25/.40	.24/.36	.21/.28	.10/.20	.10/.12	663	69P	911	500	220	50
		.01/.42	.03/.39	.03/.37	.08/.30	.09/.28	.11/.24	.12/.18	.10/.12	663	69R	1366	750	220	50
10 KT [9-80]		.95/.97	.80/.85	.71/.76	.46/.50	.36/.40	.26/.30	.16/.19	.06/.11	877	903	182	100	242	50
		.84/.93	.67/.78	.61/.71	.45/.50	.36/.40	.26/.30	.16/.19	.06/.11	877	903	455	250	242	50
		.42/.75	.39/.62	.38/.58	.33/.44	.31/.38	.25/.29	.16/.19	.06/.11	877	903	911	500	242	50
		.09/.55	.15/.48	.16/.45	.19/.37	.19/.33	.19/.26	.15/.19	.06/.11	877	903	1366	750	242	50
100 KT [11-218]		.95/.97	.81/.86	.73/.80	.46/.54	.36/.44	.25/.30	.16/.20	.11/.13	113R	1229	182	100	439	50
		.91/.95	.73/.82	.67/.77	.46/.54	.36/.44	.25/.30	.16/.20	.11/.13	113R	1229	455	250	439	50
		.65/.85	.53/.71	.51/.67	.41/.50	.35/.42	.25/.30	.16/.20	.11/.13	113R	1229	911	500	439	50
		.33/.71	.33/.60	.33/.57	.30/.45	.28/.39	.22/.29	.16/.20	.11/.13	113R	1229	1366	750	439	50

COVERAGE TABLE

(Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE TRANSIENT
LOW AIRBURST

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
YIELD	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	400	800	1000	1200	1400	1600	2000	2400						
3 KT [7-46]	.95/.97	.86/.91	.70/.75	.51/.56	.38/.42	.28/.32	.17/.21	.10/.12	854	880	182	100	220	50
	.92/.96	.71/.83	.59/.69	.48/.54	.37/.41	.28/.32	.17/.21	.10/.12	854	880	455	250	220	50
	.42/.79	.38/.65	.36/.56	.34/.47	.31/.38	.20/.31	.17/.21	.10/.12	854	880	911	500	220	50
	.04/.57	.12/.49	.15/.43	.17/.38	.18/.33	.10/.27	.10/.20	.10/.12	854	880	1366	750	220	50
10 KT [9-80]	800	1100	1250	1600	1800	2050	2400	3200						
	.95/.97	.82/.86	.72/.76	.47/.51	.36/.41	.27/.31	.20/.22	.10/.12	1089	1114	182	100	242	50
	.87/.93	.72/.81	.65/.73	.46/.51	.36/.41	.27/.31	.20/.22	.10/.12	1089	1114	455	250	242	50
	.57/.80	.50/.69	.47/.62	.40/.47	.35/.39	.27/.31	.20/.22	.10/.12	1089	1114	911	500	242	50
	.26/.64	.28/.56	.28/.52	.27/.41	.26/.36	.23/.29	.20/.22	.10/.12	1089	1114	1366	750	242	50
100 KT [11-218]	1000	1400	1600	2000	2300	2600	3200	3500						
	.95/.97	.85/.87	.72/.76	.50/.54	.36/.41	.28/.32	.18/.22	.15/.17	1394	1437	182	100	439	50
	.91/.96	.77/.84	.69/.75	.50/.54	.36/.41	.28/.32	.18/.22	.15/.17	1394	1437	455	250	439	50
	.73/.88	.61/.75	.55/.67	.45/.51	.36/.40	.28/.32	.18/.22	.15/.17	1394	1437	911	500	439	50
	.47/.76	.43/.65	.41/.59	.36/.47	.32/.38	.27/.31	.18/.22	.15/.17	1394	1437	1366	750	439	50

MARK 50 BOMB

COVERAGE TABLE (Distances in meters)

EXPOSED PERSONNEL - LATENT LETHALITY LOW AIRBURST

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
YIELD	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
3 KT [7-46]	800	1100	1300	1700	1900	2200	2700	3200						
	.95/.97	.86/.91	.75/.77	.47/.51	.38/.42	.27/.31	.17/.21	.10/.12	1164	1184	182	100	220	50
	.90/.95	.77/.86	.67/.74	.46/.51	.38/.42	.27/.31	.17/.21	.10/.12	1168	1184	455	250	220	50
	.63/.84	.54/.73	.50/.65	.41/.47	.36/.40	.27/.31	.17/.21	.10/.12	1164	1184	911	500	220	50
	.31/.68	.31/.60	.31/.54	.29/.42	.28/.37	.25/.29	.17/.21	.10/.12	1164	1184	1366	750	220	50
10 KT [9-80]	1100	1500	1700	2100	2300	2700	3200	4000						
	.95/.97	.81/.85	.70/.72	.48/.52	.40/.42	.28/.32	.20/.22	.10/.12	1446	1464	182	100	242	50
	.90/.94	.76/.81	.67/.71	.48/.52	.40/.42	.28/.32	.20/.22	.10/.12	1446	1464	455	250	242	50
	.72/.86	.60/.73	.54/.65	.44/.49	.40/.42	.28/.32	.20/.22	.10/.12	1446	1464	911	500	242	50
	.47/.75	.43/.63	.41/.57	.36/.46	.33/.40	.26/.31	.20/.22	.10/.12	1446	1464	1366	750	242	50
100 KT [11-218]	1400	1900	2100	2600	2900	3200	4000	4600						
	.95/.97	.81/.84	.71/.74	.50/.52	.40/.42	.31/.34	.20/.22	.15/.17	1800	1843	182	100	434	50
	.91/.95	.77/.82	.70/.73	.50/.52	.40/.42	.31/.34	.20/.22	.15/.17	1800	1843	455	250	434	50
	.80/.90	.66/.76	.60/.69	.47/.51	.40/.42	.31/.34	.20/.22	.15/.17	1800	1843	911	500	434	50
	.62/.82	.53/.69	.50/.63	.42/.49	.37/.41	.31/.34	.20/.22	.15/.17	1800	1843	1366	750	434	50

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

YIELD	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO BLDG	LT ACFT OBSN UTIL HEL	IN FLIGHT OV-1B ASLT HEL	CARGO HEL	FOREST BLOWDOWN DECID CONIF	WILDLAND FIRES CLASS I	CLASS IV	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG								
3 KT [7-46]	5000	4700	3100	3100	2800	2300	3200	2900	1600*	800	4300	4500	4900	3400	2000	1400	3600	2300
	5000	5000	3500	3500	3200	2600	3600	3300	2000*	1000	4300	4500	4900	3400	2100	1600	3600	2300
	6000	5700	4100	4100	3900	3300	4300	3900	2600*	1200	4500	4700	5000	3600	2300	1800	3800	2600
	6700	6400	4800	4800	4600	4000	4900	4600	3300*	1200	4700	4900	5200	3900	2500	2000	4100	2800
10 KT [9-80]	8500	7600	5000	4800	4500	3700	4500	4600	1900*	1200	6200	7300	7700	6500	3000	2200	5900	3900
	8700	8100	5400	5300	5000	4100	5000	4500	2300*	1400	6200	7300	7700	6500	3000	2300	5900	3900
	9400	8800	6100	6000	5700	4800	5700	5200	3000*	1600	6300	7300	7600	6500	3300	2500	6000	4200
	10100	9500	6800	6700	6400	5500	6400	5900	3700*	1800	6500	7600	7900	6800	3600	2800	6200	4400
100 KT [11-218]	22100	20500	12900	11400	10500	7900	8800	7800	3400	2800	12500	16900	16900	16900	6800	5200	14500	8900
	22600	20900	13300	11800	10900	8300	9200	8300	3800	2800	12500	16900	16900	16900	6800	5200	14500	8900
	23300	21600	14000	12500	11600	9000	9900	9000	4500	3100	12500	16900	16900	16900	6800	5400	14500	8900
	24000	22300	14700	13200	12300	9700	10600	9700	5200	3300	12500	16900	16900	16900	7100	5600	14500	9100

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

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CHAPTER 5
 COVERAGE AND SAFETY TABLES FOR
 LOW AIRBURST
 PERSONNEL IN OPEN FOXHOLES

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Short Range Cannon	1.0 KT	5-4
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Free Flight Rocket	20.0 KT	5-14
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Guided Missile	50.0 KT	5-20
Guided Missile	100.0 KT	5-22
MARK 50 Bomb	3.0 KT	5-24
MARK 50 Bomb	10.0 KT	5-24
MARK 50 Bomb	100.0 KT	5-24

SHORT RANGE CANNON

.2 KT
(3-10)

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE PERMANENT
LOW AIRBURST

EFFECTIVENESS									PROB	ACCURACY DATA				
RANGE	RADIUS OF TARGET								MIN	EXPT	CD/90	CEP	HOB	PEH
	100	150	200	225	250	275	375	450	RD	RD				
2000	.95/.97	.90/.92	.65/.67	.55/.57	.45/.47	.35/.37	.20/.22	.10/.12	165	166	25	12	60	5
3000	.95/.97	.87/.91	.65/.67	.55/.57	.45/.47	.35/.37	.20/.22	.10/.12	164	166	38	19	60	8
4000	.95/.97	.83/.90	.65/.67	.53/.56	.43/.47	.35/.37	.18/.22	.10/.12	163	165	51	25	60	10
5000	.94/.97	.80/.88	.61/.66	.51/.56	.42/.46	.35/.37	.17/.21	.10/.12	161	165	64	32	64	13
6000	.91/.96	.76/.85	.58/.65	.50/.55	.41/.46	.35/.37	.17/.21	.10/.12	160	164	77	38	71	15
7000	.86/.94	.71/.82	.55/.63	.47/.54	.40/.45	.33/.37	.16/.21	.10/.12	156	163	90	45	81	18
8000	.81/.92	.65/.80	.51/.61	.45/.52	.38/.44	.31/.36	.16/.20	.10/.12	152	161	102	51	88	20
9000	.72/.89	.58/.76	.46/.58	.41/.50	.34/.42	.30/.35	.16/.19	.10/.12	148	158	116	58	99	23
10000	.64/.85	.52/.72	.42/.55	.37/.47	.31/.40	.27/.34	.15/.18	.10/.12	142	156	128	64	106	25

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	175	225	250	325	350	400	500	700						
2000	.95/.97	.85/.87	.80/.82	.55/.57	.45/.47	.35/.37	.20/.22	.10/.12	238	239	25	12	60	5
3000	.95/.97	.85/.87	.80/.82	.55/.57	.45/.47	.35/.37	.20/.22	.10/.12	237	239	38	19	60	8
4000	.93/.97	.85/.87	.78/.82	.55/.57	.45/.47	.35/.37	.20/.22	.10/.12	236	239	51	25	60	10
5000	.91/.96	.82/.86	.76/.81	.53/.57	.45/.47	.35/.37	.20/.22	.10/.12	236	238	64	32	64	13
6000	.91/.95	.81/.86	.75/.80	.54/.57	.45/.47	.35/.37	.20/.22	.10/.12	237	239	77	38	71	15
7000	.90/.94	.78/.84	.72/.79	.52/.56	.45/.47	.35/.37	.20/.22	.10/.12	235	238	90	45	81	18
8000	.87/.93	.76/.83	.70/.77	.51/.56	.45/.47	.35/.37	.20/.22	.10/.12	234	238	102	51	88	20
9000	.84/.91	.72/.81	.66/.76	.49/.55	.43/.47	.34/.37	.20/.22	.10/.12	228	236	116	58	99	23
10000	.80/.90	.69/.80	.63/.74	.47/.54	.42/.46	.32/.36	.20/.22	.10/.12	228	235	128	64	106	25

COVERAGE TABLE (Distances in meters)

SHORT RANGE CANNON **.2 KT** **(3-10)**

PERSONNEL IN OPEN FOXHOLES - LATENT LETHALITY **LOW AIRBURST**

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	200	375	400	500	575	675	850	1100						
2000	.95/.97	.85/.87	.80/.82	.55/.57	.41/.43	.30/.32	.20/.22	.10/.12	372	374	25	12	60	5
3000	.95/.97	.85/.87	.77/.81	.55/.57	.41/.44	.30/.32	.18/.22	.10/.12	370	374	38	19	60	8
4000	.95/.97	.83/.87	.77/.81	.55/.58	.41/.44	.30/.32	.17/.21	.10/.12	369	374	51	25	60	10
5000	.95/.97	.82/.86	.77/.81	.55/.58	.41/.44	.30/.32	.17/.21	.10/.12	368	374	64	32	64	13
6000	.95/.97	.81/.86	.77/.81	.55/.58	.41/.45	.30/.32	.18/.22	.10/.12	370	375	77	38	71	15
7000	.95/.97	.81/.85	.76/.81	.55/.59	.41/.46	.30/.32	.18/.22	.10/.12	372	376	90	45	81	18
8000	.95/.97	.80/.84	.76/.80	.56/.59	.42/.46	.30/.32	.20/.22	.10/.12	373	377	102	51	88	20
9000	.95/.97	.78/.84	.75/.80	.56/.59	.42/.46	.30/.32	.20/.22	.10/.12	372	377	116	58	99	23
10000	.95/.97	.76/.83	.73/.79	.56/.59	.42/.46	.30/.32	.19/.22	.10/.12	372	376	128	64	106	25

SAFETY DISTANCE TABLE (Distances in meters)

T R O O P S A F E T Y (M S D) ----- P R E C L U D E (L S D) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN	IN FLIGHT		FOREST		WILDLAND FIRES	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	ASLT	CARGO	DECID	CONIF	I	IV
2000	1100	1000	800	900	900	800	800	700	600	200	1100	1300	1400	1100	400	300	800	400
3000	1100	1000	800	900	900	800	800	700	600	200	1100	1300	1400	1100	400	300	800	500
4000	1200	1100	800	1000	900	800	800	700	700	200	1100	1300	1400	1100	400	300	800	500
5000	1200	1100	800	1000	900	800	900	800	700	200	1100	1300	1400	1100	400	300	800	500
6000	1200	1100	900	1000	1000	900	900	800	700	200	1100	1300	1400	1100	400	300	800	500
7000	1200	1100	900	1000	1000	900	900	800	700	200	1200	1300	1400	1100	500	300	800	500
8000	1200	1100	900	1000	1000	900	1000	900	700	200	1200	1300	1400	1100	500	300	800	500
9000	1200	1100	900	1100	1000	900	1000	900	700	200	1300	1300	1400	1100	500	300	800	500
10000	1300	1200	900	1100	1000	900	1100	1000	800	200	1300	1300	1400	1100	500	300	800	500

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

SHORT RANGE CANNON

1 KT
(5-24)

COVERAGE TABLE (Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE PERMANENT
LOW AIRBURST

EFFECTIVENESS									PROB	ACCURACY DATA				
RANGE	RADIUS OF TARGET								MIN	EXPT	CD/90	CEP	HOB	PEH
	200	325	375	450	500	600	700	900	RD	RD				
2000	.95/.97	.85/.87	.70/.72	.55/.57	.45/.47	.30/.32	.20/.22	.10/.12	329	329	25	12	120	5
3000	.95/.97	.85/.87	.70/.72	.53/.57	.42/.46	.30/.32	.20/.22	.10/.12	327	328	39	19	120	8
4000	.95/.97	.85/.87	.70/.72	.53/.57	.42/.46	.30/.32	.20/.22	.10/.12	326	328	51	25	120	10
5000	.95/.97	.82/.86	.70/.72	.52/.56	.41/.46	.30/.32	.20/.22	.10/.12	325	328	64	32	120	13
6000	.95/.97	.81/.85	.70/.72	.52/.56	.41/.46	.30/.32	.20/.22	.10/.12	324	328	77	38	120	15
7000	.95/.97	.80/.84	.70/.72	.52/.56	.41/.46	.30/.32	.20/.22	.10/.12	322	327	90	45	120	18
8000	.95/.97	.77/.84	.68/.72	.51/.55	.41/.45	.28/.32	.20/.22	.10/.12	321	327	102	51	120	20
9000	.95/.97	.76/.82	.66/.71	.51/.55	.41/.45	.28/.32	.20/.22	.10/.12	319	326	116	58	120	23
10000	.93/.96	.74/.81	.65/.70	.49/.55	.40/.44	.27/.31	.20/.22	.10/.12	315	324	129	64	127	25

COVERAGE TABLE (Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE TRANSIENT
LOW AIRBURST

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
RANGE	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	300	425	500	600	700	800	900	1200						
2000	.95/.97	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	434	435	25	12	120	5
3000	.95/.97	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	434	434	38	19	120	8
4000	.95/.97	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	434	434	51	25	120	10
5000	.95/.97	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	433	434	64	32	120	13
6000	.95/.97	.85/.87	.70/.72	.50/.52	.37/.41	.30/.32	.20/.22	.10/.12	431	434	77	38	120	15
7000	.95/.97	.83/.86	.70/.72	.50/.52	.37/.41	.30/.32	.20/.22	.10/.12	430	433	90	45	120	18
8000	.95/.97	.81/.86	.70/.72	.50/.52	.36/.41	.30/.32	.20/.22	.10/.12	428	433	102	51	120	20
9000	.94/.97	.80/.85	.70/.72	.50/.52	.36/.41	.29/.32	.20/.22	.10/.12	427	432	116	58	120	23
10000	.92/.96	.79/.84	.68/.72	.50/.52	.36/.40	.27/.31	.20/.22	.10/.12	424	431	129	64	127	25

COVERAGE TABLE (Distances in meters)

SHORT RANGE CANNON **1 KT** **(5-24)**

PERSONNEL IN OPEN FOXHOLES - LATENT LETHALITY **LOW AIRBURST**

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
RANGE	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	500	600	700	850	1000	1100	1300	1700						
2000	.95/.97	.85/.87	.71/.74	.65/.57	.40/.42	.30/.32	.20/.22	.10/.12	620	620	25	12	120	5
3000	.95/.97	.85/.87	.71/.74	.65/.57	.40/.42	.30/.32	.20/.22	.10/.12	610	620	38	19	120	8
4000	.93/.97	.85/.87	.71/.74	.65/.57	.40/.42	.30/.32	.20/.22	.10/.12	610	619	51	25	120	10
5000	.92/.96	.85/.87	.71/.74	.65/.57	.38/.42	.30/.32	.20/.22	.10/.12	610	619	64	32	120	13
6000	.91/.95	.85/.87	.71/.74	.63/.57	.37/.41	.30/.32	.20/.22	.10/.12	610	619	77	38	120	15
7000	.91/.95	.85/.87	.71/.74	.63/.57	.37/.41	.30/.32	.20/.22	.10/.12	610	618	90	45	120	18
8000	.91/.94	.85/.87	.71/.74	.62/.56	.37/.41	.30/.32	.20/.22	.10/.12	610	618	102	51	120	20
9000	.91/.94	.85/.87	.71/.74	.62/.56	.36/.41	.30/.32	.20/.22	.10/.12	610	617	116	58	120	23
10000	.91/.94	.84/.87	.71/.74	.62/.56	.36/.40	.30/.32	.20/.22	.10/.12	610	617	128	64	120	25

SAFETY DISTANCE TABLE (Distances in meters)

T R O O P S A F E T Y (M S D) ----- P R E C L U D E (L S D) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT	CARGO HEL	FOREST BLOWDOWN DECID CONIF	WILDLAND FIRES CLASS I	CLASS IV
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL			
2000	2500	2300	1400	1400	1300	1100	1400	1300	900	400	2000	2400	2700	1800	900	600	1800
3000	2500	2300	1400	1500	1300	1100	1500	1300	900	400	2000	2400	2700	1800	900	600	1800
4000	2500	2300	1400	1500	1400	1200	1500	1300	1000	400	2100	2400	2700	1800	900	600	1800
5000	2500	2400	1400	1500	1400	1200	1500	1400	1000	400	2100	2400	2700	1800	900	600	1800
6000	2600	2400	1400	1500	1400	1200	1600	1400	1000	400	2100	2400	2700	1800	900	600	1800
7000	2600	2400	1500	1500	1400	1200	1600	1400	1000	400	2100	2400	2700	1800	900	600	1800
8000	2600	2400	1500	1600	1400	1200	1600	1400	1000	400	2100	2400	2700	1800	900	600	1800
9000	2600	2400	1500	1600	1400	1200	1600	1500	1000	400	2100	2400	2700	1800	900	600	1800
10000	2600	2400	1500	1600	1500	1300	1700	1500	1100	400	2200	2400	2700	1800	1000	700	1800

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

MEDIUM RANGE CANNON 2 KT (6-38)

COVERAGE TABLE (Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE PERMANENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	300	450	500	625	700	800	1000	1200						
2000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	445	447	25	12	150	5
3000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	444	447	38	19	150	8
4000	.95/.97	.85/.87	.73/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	443	447	51	25	150	10
5000	.95/.97	.82/.86	.72/.76	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	441	447	64	32	150	13
6000	.95/.97	.81/.86	.72/.76	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	439	446	77	38	150	15
7000	.95/.97	.81/.85	.72/.76	.50/.52	.40/.42	.30/.32	.18/.22	.10/.12	437	446	90	45	150	18
8000	.95/.97	.80/.84	.71/.76	.50/.52	.40/.42	.30/.32	.18/.22	.10/.12	436	445	102	51	150	20
9000	.95/.97	.78/.84	.71/.75	.50/.52	.40/.42	.30/.32	.18/.22	.10/.12	433	444	116	58	150	23
10000	.94/.97	.77/.83	.70/.75	.48/.52	.38/.42	.30/.32	.17/.21	.10/.12	432	444	129	64	150	25
11000	.92/.96	.76/.82	.69/.74	.48/.52	.38/.42	.30/.32	.17/.21	.10/.12	429	443	141	71	150	28
12000	.91/.96	.75/.81	.67/.74	.48/.51	.38/.42	.28/.32	.17/.21	.10/.12	429	442	154	77	150	30
13000	.91/.95	.73/.80	.65/.73	.46/.51	.36/.41	.28/.32	.17/.21	.10/.12	422	439	167	84	150	33
14000	.90/.95	.71/.79	.64/.71	.45/.50	.35/.41	.26/.31	.16/.20	.10/.12	416	437	180	90	162	35
15000	.87/.94	.67/.77	.60/.70	.42/.49	.32/.39	.25/.30	.16/.20	.10/.12	405	432	193	97	170	38
16000	.85/.93	.65/.76	.58/.68	.41/.49	.32/.39	.25/.30	.16/.20	.10/.12	399	428	205	103	180	40
17000	.82/.91	.62/.74	.55/.67	.37/.47	.30/.38	.22/.29	.15/.19	.10/.12	386	422	219	110	190	43
18000	.79/.90	.58/.72	.52/.65	.36/.46	.30/.38	.22/.29	.13/.18	.10/.12	377	418	231	116	197	45
19000	.75/.88	.55/.70	.48/.63	.32/.44	.26/.36	.20/.28	.12/.18	.08/.12	361	411	244	122	208	48
20000	.70/.87	.51/.68	.44/.61	.31/.44	.25/.35	.20/.27	.11/.18	.08/.12	351	405	257	128	210	50

COVERAGE TABLE (Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	400	600	650	850	950	1050	1300	1600						
2000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	580	590	25	12	150	5
3000	.95/.97	.85/.87	.75/.77	.47/.51	.40/.42	.30/.32	.20/.22	.10/.12	588	590	39	19	150	8
4000	.95/.97	.83/.87	.75/.77	.47/.51	.38/.42	.30/.32	.20/.22	.10/.12	587	589	51	25	150	10
5000	.95/.97	.82/.86	.75/.77	.47/.51	.37/.41	.30/.32	.20/.22	.10/.12	586	589	64	32	150	13
6000	.95/.97	.81/.86	.75/.77	.46/.51	.37/.41	.30/.32	.20/.22	.10/.12	585	589	77	38	150	15
7000	.95/.97	.81/.85	.75/.77	.46/.51	.37/.41	.30/.32	.20/.22	.10/.12	583	588	90	45	150	18
8000	.95/.97	.81/.84	.75/.77	.46/.51	.36/.41	.30/.32	.20/.22	.10/.12	582	588	102	51	150	20
9000	.95/.97	.80/.84	.75/.77	.46/.50	.36/.41	.30/.32	.20/.22	.10/.12	581	587	116	58	150	23
10000	.95/.97	.80/.84	.74/.77	.46/.50	.36/.41	.30/.32	.20/.22	.10/.12	579	586	129	64	150	25
11000	.95/.97	.79/.83	.73/.77	.46/.50	.36/.40	.30/.32	.20/.22	.10/.12	578	586	141	71	150	28
12000	.95/.97	.78/.83	.73/.76	.46/.50	.36/.40	.30/.32	.20/.22	.10/.12	576	585	154	77	150	30
13000	.93/.97	.76/.82	.71/.76	.45/.49	.36/.40	.30/.32	.20/.22	.10/.12	572	583	167	84	150	33
14000	.92/.96	.76/.81	.70/.75	.45/.49	.36/.39	.30/.32	.18/.22	.10/.12	569	581	180	90	162	35
15000	.91/.96	.75/.80	.68/.74	.45/.48	.35/.39	.28/.32	.18/.22	.10/.12	563	578	193	97	170	38
16000	.91/.95	.72/.79	.67/.73	.43/.48	.35/.39	.28/.32	.17/.21	.10/.12	554	575	205	103	180	40
17000	.90/.95	.71/.78	.65/.72	.42/.48	.33/.38	.27/.31	.16/.21	.10/.12	546	571	219	110	190	43
18000	.89/.94	.69/.77	.64/.71	.40/.47	.32/.38	.26/.31	.16/.20	.10/.12	537	568	231	116	197	45
19000	.87/.93	.67/.76	.61/.70	.40/.46	.31/.37	.25/.30	.16/.20	.10/.12	529	563	244	122	208	48
20000	.86/.93	.65/.75	.59/.69	.37/.45	.30/.37	.25/.30	.16/.20	.10/.12	521	559	257	128	210	50

COVERAGE TABLE (Distances in meters)

MEDIUM RANGE CANNON 2 KT (6-38)

PERSONNEL IN OPEN FOXHOLES - LATENT LETHALITY LOW AIRBURST

RANGE	EFFECTIVENESS RADIUS OF TARGET								PROB MIN RD	EXPT RD	ACCURACY DATA			
	600	800	900	1200	1300	1500	1800	2300			CD/90	CEP	HOB	PEH
2000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	834	834	25	12	150	5
3000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	833	834	32	19	150	4
4000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	833	833	51	25	150	10
5000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	832	833	64	32	150	13
6000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	831	833	77	38	150	15
7000	.95/.97	.85/.87	.75/.77	.49/.52	.40/.42	.30/.32	.20/.22	.10/.12	831	832	90	45	150	18
8000	.95/.97	.85/.87	.75/.77	.47/.51	.40/.42	.30/.32	.20/.22	.10/.12	829	832	102	51	150	20
9000	.95/.97	.85/.87	.75/.77	.47/.51	.40/.42	.30/.32	.20/.22	.10/.12	827	831	116	58	150	23
10000	.95/.97	.85/.87	.75/.77	.47/.51	.40/.42	.30/.32	.20/.22	.10/.12	826	831	128	64	150	25
11000	.95/.97	.85/.87	.75/.77	.46/.50	.40/.42	.30/.32	.20/.22	.10/.12	825	830	141	71	150	28
12000	.95/.97	.85/.87	.75/.77	.46/.50	.40/.42	.30/.32	.20/.22	.10/.12	825	829	154	77	150	30
13000	.95/.97	.85/.87	.75/.77	.46/.50	.40/.42	.30/.32	.20/.22	.10/.12	825	828	167	84	150	33
14000	.94/.97	.84/.87	.75/.77	.46/.50	.40/.42	.30/.32	.20/.22	.10/.12	816	827	180	90	162	35
15000	.93/.96	.82/.86	.75/.77	.46/.50	.40/.42	.30/.32	.20/.22	.10/.12	809	825	193	97	173	38
16000	.92/.96	.82/.86	.75/.77	.46/.49	.40/.42	.30/.32	.20/.22	.10/.12	811	823	205	103	180	40
17000	.92/.96	.81/.86	.73/.77	.45/.49	.40/.42	.30/.32	.20/.22	.10/.12	807	821	219	110	190	43
18000	.91/.96	.80/.85	.72/.76	.45/.49	.38/.42	.28/.32	.20/.22	.10/.12	802	819	231	116	197	45
19000	.91/.95	.79/.84	.71/.76	.45/.48	.38/.42	.28/.32	.20/.22	.10/.12	798	816	244	122	208	48
20000	.91/.95	.78/.84	.70/.76	.45/.48	.37/.41	.27/.31	.20/.22	.10/.12	789	813	257	128	213	50

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED BRG	LT DAM TO BLDG	LT ACFT OBSN UTIL HEL	IN FLIGHT		FOREST BLOWDOWN DECID CONIF	WILDLAND FIRES CLASS CLASS I IV		
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER				OV-1B ASLT CARGO HEL	HEL				
2000	3900	3600	2300	2300	2100	1600	2100	1800	1200	600	2400	3700	4000	2700	1300	900	2900	1800
3000	3900	3600	2300	2300	2100	1600	2100	1900	1200	600	3000	3700	4000	2700	1400	900	2900	1800
4000	3900	3700	2300	2300	2200	1700	2100	1900	1200	600	3000	3700	4000	2700	1400	900	2900	1800
5000	3900	3700	2300	2400	2200	1700	2200	1900	1300	600	3000	3700	4000	2700	1400	900	2900	1800
6000	4000	3700	2300	2400	2200	1700	2200	2000	1300	600	3000	3700	4000	2700	1400	900	2900	1800
7000	4000	3700	2400	2400	2200	1700	2200	2000	1300	600	3000	3700	4000	2700	1400	900	2900	1800
8000	4000	3700	2400	2400	2200	1800	2300	2000	1300	600	3000	3700	4000	2700	1400	900	2900	1800
9000	4000	3800	2400	2500	2300	1800	2300	2100	1400	600	3100	3700	4000	2700	1400	900	2900	1800
10000	4000	3800	2400	2500	2300	1800	2400	2100	1400	600	3100	3700	4000	2700	1400	900	2900	1800
11000	4100	3800	2400	2500	2300	1800	2400	2200	1400	600	3200	3700	4000	2700	1500	1000	2900	1800
12000	4100	3800	2500	2500	2300	1800	2500	2200	1400	600	3200	3700	4000	2700	1500	1000	2900	1800
13000	4100	3800	2500	2500	2400	1900	2600	2300	1400	600	3300	3700	4000	2700	1500	1000	2900	1800
14000	4100	3900	2500	2600	2400	1900	2600	2300	1500	600	3400	3700	4000	2700	1600	1100	2900	1800
15000	4100	3900	2500	2600	2400	1900	2700	2400	1500	700	3400	3700	4000	2700	1600	1100	2900	1800
16000	4200	3900	2600	2600	2400	1900	2700	2400	1500	700	3500	3700	4000	2700	1600	1100	2900	1800
17000	4200	3900	2600	2600	2400	1900	2800	2500	1500	700	3500	3700	4000	2700	1600	1100	2900	1800
18000	4200	4000	2600	2600	2500	2000	2800	2500	1500	700	3600	3700	4000	2700	1600	1200	2900	1800
19000	4200	4000	2600	2700	2500	2000	2900	2600	1600	700	3600	3700	4000	2700	1600	1200	2900	1800
20000	4300	4000	2600	2700	2500	2000	2900	2600	1600	700	3700	3700	4000	2700	1600	1200	2900	1800

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

MEDIUM RANGE CANNON 8 KT (9-74)

COVERAGE TABLE (Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE PERMANENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	600	700	800	950	1050	1250	1500	2000						
2000	.90/.92	.80/.82	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	682	682	25	12	120	5
3000	.90/.92	.80/.82	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	681	682	38	19	120	8
4000	.90/.92	.80/.82	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	681	681	51	25	120	10
5000	.90/.92	.80/.82	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	679	681	64	32	120	13
6000	.90/.92	.80/.82	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	678	680	77	38	120	15
7000	.90/.92	.80/.82	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	677	680	90	45	125	18
8000	.90/.92	.80/.82	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	676	679	102	51	132	20
9000	.90/.92	.80/.82	.69/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	671	678	116	58	142	23
10000	.90/.92	.80/.82	.68/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	671	677	128	64	149	25
11000	.90/.92	.80/.82	.67/.71	.50/.52	.40/.42	.27/.31	.20/.22	.10/.12	665	675	141	71	160	28
12000	.86/.92	.78/.82	.66/.70	.50/.52	.40/.42	.27/.31	.20/.22	.10/.12	660	673	154	77	167	30
13000	.87/.91	.77/.81	.65/.69	.48/.52	.40/.42	.26/.31	.18/.22	.10/.12	653	669	167	84	177	33
14000	.86/.91	.76/.80	.65/.69	.47/.51	.38/.42	.26/.31	.17/.21	.10/.12	647	667	180	90	184	35
15000	.84/.90	.75/.80	.62/.68	.46/.51	.37/.41	.26/.30	.17/.21	.10/.12	638	662	193	97	195	38
16000	.82/.89	.72/.79	.61/.68	.45/.50	.36/.41	.26/.30	.16/.21	.10/.12	631	659	205	103	202	40
17000	.81/.88	.70/.78	.59/.67	.42/.50	.35/.40	.25/.29	.16/.21	.10/.12	620	654	219	110	212	43
18000	.79/.87	.69/.77	.58/.66	.42/.49	.35/.40	.25/.29	.16/.20	.08/.12	612	650	231	116	219	45
19000	.77/.86	.66/.75	.55/.64	.40/.48	.32/.39	.23/.28	.16/.20	.07/.11	600	644	244	122	230	48
20000	.75/.85	.65/.75	.54/.64	.40/.48	.32/.39	.21/.27	.15/.19	.07/.11	591	639	257	128	237	50

COVERAGE TABLE (Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	800	900	1000	1200	1350	1600	1950	2400						
2000	.90/.92	.80/.82	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	864	864	25	12	120	5
3000	.90/.92	.80/.82	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	863	864	38	19	120	8
4000	.88/.92	.80/.82	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	862	864	51	25	120	10
5000	.88/.92	.80/.82	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	861	863	64	32	120	13
6000	.87/.91	.80/.82	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	860	863	77	38	120	15
7000	.87/.91	.80/.82	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	860	863	90	45	125	18
8000	.87/.91	.80/.82	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	858	863	102	51	132	20
9000	.87/.91	.80/.82	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	859	862	116	58	142	23
10000	.87/.91	.80/.82	.70/.72	.50/.52	.40/.42	.29/.32	.20/.22	.10/.12	856	862	128	64	149	25
11000	.86/.91	.80/.82	.70/.72	.50/.52	.40/.42	.27/.31	.20/.22	.10/.12	850	860	141	71	160	28
12000	.86/.90	.80/.82	.70/.72	.50/.52	.40/.42	.27/.31	.18/.22	.10/.12	850	859	154	77	167	30
13000	.86/.89	.79/.82	.70/.72	.50/.52	.40/.42	.26/.30	.17/.21	.10/.12	846	857	167	84	177	33
14000	.85/.89	.78/.81	.68/.72	.50/.52	.40/.42	.26/.30	.17/.21	.10/.12	841	855	180	90	184	35
15000	.85/.88	.77/.81	.67/.71	.50/.52	.38/.42	.26/.30	.16/.21	.10/.12	834	851	193	97	195	38
16000	.84/.88	.76/.81	.66/.71	.48/.52	.38/.42	.26/.30	.16/.21	.10/.12	828	849	205	103	202	40
17000	.82/.88	.75/.80	.66/.70	.48/.52	.37/.41	.26/.29	.16/.20	.10/.12	820	845	219	110	212	43
18000	.81/.87	.75/.80	.65/.70	.46/.51	.37/.41	.26/.29	.16/.20	.10/.12	814	842	231	116	219	45
19000	.80/.86	.73/.79	.64/.70	.46/.51	.36/.40	.25/.29	.16/.19	.10/.12	804	837	244	122	230	48
20000	.79/.86	.71/.78	.62/.68	.45/.50	.35/.40	.25/.28	.16/.19	.10/.12	797	833	257	128	237	50

MEDIUM RANGE CANNON 8 KT (9-74)

COVERAGE TABLE (Distances in meters)

PERSONNEL IN OPEN FOXHOLES - LATENT LETHALITY LOW AIRBURST

RANGE	EFFECTIVENESS								PROB	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET								MIN		CD/90	CEP	HOB	PEH
	850	1100	1300	1650	1800	2100	2450	3100	RD					
2000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.11/.15	1173	1173	25	12	120	5
3000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.11/.15	1171	1173	38	19	120	8
4000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.11/.15	1170	1173	51	25	120	10
5000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.11/.15	1168	1173	64	32	120	13
6000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.11/.15	1167	1172	77	38	120	15
7000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.11/.16	1167	1172	90	45	125	18
8000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.11/.16	1168	1173	102	51	132	20
9000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.12/.16	1170	1174	116	58	142	23
10000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.11/.16	1168	1174	128	64	149	25
11000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.12/.16	1168	1173	141	71	160	28
12000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.11/.15	1167	1173	154	77	167	30
13000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.11/.15	1162	1172	167	84	177	33
14000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.11/.15	1158	1170	180	90	184	35
15000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.11/.15	1156	1168	193	97	195	38
16000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.11/.15	1154	1167	205	103	202	40
17000	.95/.97	.85/.87	.73/.77	.50/.52	.40/.42	.30/.32	.20/.22	.11/.15	1148	1164	219	110	212	43
18000	.94/.97	.85/.87	.73/.77	.50/.52	.40/.42	.30/.32	.20/.22	.11/.14	1143	1162	231	116	219	45
19000	.93/.97	.85/.87	.72/.76	.48/.52	.40/.42	.30/.32	.20/.22	.11/.14	1136	1159	244	122	230	48
20000	.92/.96	.84/.87	.71/.76	.47/.51	.40/.42	.30/.32	.20/.22	.11/.14	1131	1156	257	128	237	50

SAFETY DISTANCE TABLE (Distances in meters)

T R O O P S A F E T Y (M S D) ----- P R E C L U D E (L S D) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT	FOREST CARGO BLOWDOWN	WILDLAND FIRES CLASS CLASS			
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	DECID	CONIF	I	IV
2000	7500	6900	4500	4400	4100	3200	3400	3000	1600	1100	5000	6900	7300	5900	2400	1700	5600	3700
3000	7500	6900	4500	4400	4100	3300	3500	3100	1600	1100	5000	6900	7300	5900	2400	1700	5600	3700
4000	7500	7000	4500	4400	4100	3300	3500	3100	1700	1200	5000	6900	7300	5900	2500	1700	5600	3700
5000	7600	7000	4600	4500	4200	3300	3600	3200	1700	1200	5000	6900	7300	5900	2500	1800	5600	3700
6000	7600	7000	4600	4500	4200	3300	3600	3200	1700	1200	5100	6900	7300	5900	2500	1800	5600	3700
7000	7600	7000	4600	4500	4200	3400	3700	3300	1800	1200	5100	6900	7300	5900	2500	1800	5600	3700
8000	7600	7100	4600	4500	4200	3400	3700	3300	1800	1200	5200	6900	7300	5900	2500	1800	5600	3700
9000	7700	7100	4700	4600	4300	3400	3800	3400	1800	1200	5300	6900	7300	5900	2600	1800	5600	3700
10000	7700	7100	4700	4600	4300	3400	3900	3500	1800	1200	5300	6900	7300	5900	2600	1800	5600	3700
11000	7700	7100	4700	4600	4300	3500	4000	3500	1900	1200	5400	6900	7300	5900	2600	1900	5600	3700
12000	7700	7200	4700	4600	4300	3500	4000	3600	1900	1200	5500	6900	7300	5900	2600	1900	5600	3700
13000	7800	7200	4800	4700	4400	3500	4100	3700	1900	1200	5500	6900	7300	5900	2700	1900	5600	3700
14000	7800	7200	4800	4700	4400	3500	4200	3700	1900	1200	5600	6900	7300	5900	2700	1900	5600	3700
15000	7800	7200	4800	4700	4400	3600	4300	3800	2000	1200	5700	6900	7300	5900	2700	2000	5600	3700
16000	7800	7300	4800	4700	4400	3600	4300	3900	2000	1200	5700	6900	7300	5900	2800	2000	5600	3700
17000	7900	7300	4900	4800	4500	3600	4400	3900	2000	1200	5800	6900	7300	5900	2800	2000	5600	3700
18000	7900	7300	4900	4800	4500	3600	4500	4000	2000	1200	5900	6900	7300	5900	2800	2000	5600	3700
19000	7900	7300	4900	4800	4500	3700	4500	4100	2100	1200	5900	6900	7300	5900	2900	2000	5600	3700
20000	7900	7400	4900	4800	4500	3700	4600	4100	2100	1200	6000	6900	7300	5900	2900	2100	5600	3700

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

FREE FLIGHT ROCKET

5 KT

TOF <40 SEC

(8-59)

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE PERMANENT
LOW AIRBURST

EFFECTIVENESS									PROB	ACCURACY DATA				
RANGE	RADIUS OF TARGET								MIN	EXPT	CD/90	CEP	HOB	PEH
	300	500	600	800	900	1050	1200	1600	RD	RD				
5000	.95/.97	.85/.90	.75/.81	.53/.57	.41/.45	.30/.32	.22/.26	.10/.12	587	587	204	108	140	25
7000	.95/.97	.85/.88	.70/.78	.50/.55	.40/.44	.30/.32	.21/.25	.10/.12	568	582	237	130	161	31
9000	.92/.96	.75/.86	.66/.76	.46/.53	.37/.42	.27/.31	.20/.24	.10/.12	548	573	266	147	185	38
10000	.90/.95	.72/.84	.63/.74	.44/.51	.36/.42	.26/.30	.20/.23	.10/.12	537	566	283	156	196	41
11000	.88/.95	.70/.83	.61/.73	.43/.51	.35/.41	.25/.30	.20/.23	.10/.12	525	562	295	162	206	44
12000	.85/.94	.68/.81	.57/.71	.40/.49	.32/.40	.23/.29	.18/.23	.10/.12	508	553	311	171	220	48
13000	.82/.93	.65/.79	.54/.69	.37/.47	.30/.38	.22/.29	.16/.22	.08/.12	494	546	325	179	231	51
14000	.78/.91	.59/.77	.51/.67	.35/.47	.27/.38	.20/.27	.13/.21	.08/.12	479	539	341	187	241	54
15000	.74/.90	.55/.75	.47/.65	.32/.45	.26/.36	.20/.27	.13/.21	.07/.11	462	531	355	194	252	57
16000	.67/.87	.51/.72	.44/.62	.30/.43	.22/.35	.17/.26	.12/.20	.06/.11	438	518	371	202	266	61
17000	.61/.85	.46/.70	.41/.60	.25/.41	.21/.34	.15/.25	.12/.19	.06/.10	419	508	385	209	276	64
18000	.55/.83	.42/.67	.34/.58	.25/.40	.21/.33	.15/.24	.10/.18	.05/.10	398	498	400	217	287	67
19000	.48/.80	.38/.65	.29/.50	.21/.39	.16/.31	.11/.24	.10/.18	.05/.10	375	486	414	223	297	70
20000	.37/.77	.31/.61	.24/.53	.16/.36	.15/.30	.11/.23	.07/.17	.03/.09	341	468	431	232	311	74
21000	.30/.74	.24/.59	.20/.50	.15/.35	.11/.28	.08/.21	.06/.17	.03/.09	313	455	445	239	322	77
22000	.22/.70	.15/.56	.16/.48	.11/.33	.11/.28	.08/.21	.05/.16	.03/.09	281	441	461	246	332	80
23000	.14/.67	.11/.53	.12/.46	.06/.32	.06/.26	.06/.19	.03/.15	.02/.08	247	427	475	253	343	83
24000	.04/.63	.06/.50	.08/.43	.06/.30	.03/.24	.03/.18	.03/.14	.02/.08	193	407	493	262	357	87
25000	.03/.59	.05/.47	.03/.40	.03/.28	.03/.23	.03/.18	.02/.13	.01/.07	126	388	507	269	371	91
26000	.02/.56	.03/.45	.03/.39	.03/.27	.03/.22	.03/.17	.02/.13	.01/.07	84	379	523	276	378	93
27000	.01/.53	.03/.42	.03/.37	.03/.26	.02/.21	.02/.16	.02/.13	.01/.07	0	361	538	283	388	96
28000	.00/.50	.02/.39	.03/.34	.02/.24	.02/.20	.02/.15	.02/.12	.01/.07	0	345	555	292	402	100
29000	.00/.47	.02/.37	.02/.32	.02/.22	.02/.19	.02/.15	.01/.11	.01/.06	0	330	569	298	413	103
30000	.00/.44	.01/.35	.02/.30	.02/.22	.02/.18	.01/.14	.01/.11	.01/.06	0	313	586	306	423	106
31000	.00/.41	.01/.33	.02/.29	.01/.20	.01/.17	.01/.13	.01/.11	.01/.06	0	302	600	313	434	109
32000	.00/.38	.01/.31	.01/.27	.01/.19	.01/.16	.01/.12	.01/.10	.01/.06	0	286	618	321	448	113
33000	.00/.35	.01/.29	.01/.25	.01/.19	.01/.15	.01/.12	.01/.09	.01/.06	0	273	632	328	458	116

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	400	600	800	1000	1100	1300	1500	2200						
5000	.95/.97	.90/.93	.76/.80	.50/.60	.40/.49	.34/.37	.25/.27	.10/.12	753	758	204	108	140	25
7000	.95/.97	.80/.92	.73/.79	.55/.59	.46/.48	.32/.36	.25/.27	.10/.12	745	755	237	130	161	31
9000	.95/.97	.80/.91	.70/.77	.53/.58	.45/.47	.31/.35	.25/.27	.10/.12	731	748	266	147	185	38
10000	.95/.97	.84/.91	.68/.76	.52/.57	.45/.48	.31/.35	.22/.26	.10/.12	722	744	283	156	196	41
11000	.95/.97	.82/.90	.67/.75	.51/.56	.43/.47	.30/.34	.22/.26	.10/.12	713	740	295	162	206	44
12000	.95/.96	.81/.89	.65/.74	.48/.56	.41/.46	.30/.34	.21/.25	.10/.12	703	733	311	171	220	48
13000	.92/.96	.79/.88	.63/.73	.46/.54	.40/.46	.28/.33	.21/.25	.10/.12	689	728	325	179	231	51
14000	.90/.95	.76/.87	.61/.72	.46/.54	.37/.45	.26/.32	.20/.24	.08/.12	679	723	341	187	241	54
15000	.89/.95	.75/.86	.59/.70	.44/.52	.37/.44	.26/.32	.20/.24	.08/.12	665	716	355	194	252	57
16000	.86/.94	.71/.85	.56/.69	.42/.51	.35/.43	.25/.31	.18/.23	.07/.11	647	708	371	202	266	61
17000	.85/.93	.69/.83	.54/.67	.40/.50	.32/.42	.22/.30	.17/.23	.07/.11	633	700	385	209	276	64
18000	.82/.92	.66/.82	.51/.66	.37/.49	.31/.41	.22/.30	.16/.23	.06/.11	618	693	400	217	287	67
19000	.79/.91	.63/.81	.49/.65	.35/.48	.30/.40	.20/.29	.15/.22	.06/.11	602	684	414	223	297	70
20000	.74/.90	.59/.78	.46/.62	.30/.46	.26/.39	.20/.29	.13/.21	.06/.10	578	671	431	232	311	74
21000	.70/.88	.55/.77	.43/.61	.30/.45	.25/.38	.17/.28	.12/.21	.06/.10	560	661	445	239	322	77
22000	.66/.87	.52/.75	.39/.59	.29/.44	.25/.37	.16/.27	.12/.21	.05/.10	540	651	461	246	332	80
23000	.64/.85	.47/.73	.34/.57	.25/.42	.21/.36	.16/.26	.11/.20	.05/.10	519	640	475	253	343	83
24000	.54/.82	.43/.70	.30/.55	.21/.41	.20/.35	.12/.25	.10/.19	.05/.09	488	625	493	262	357	87
25000	.46/.80	.37/.67	.26/.53	.20/.40	.16/.33	.11/.24	.07/.18	.03/.09	455	608	507	269	371	91
26000	.41/.78	.33/.66	.24/.52	.16/.38	.16/.33	.11/.24	.07/.18	.03/.09	437	599	523	276	378	93
27000	.35/.76	.28/.64	.21/.50	.15/.36	.11/.32	.10/.23	.06/.17	.03/.09	408	586	538	283	388	96
28000	.27/.72	.20/.61	.18/.47	.11/.35	.11/.30	.08/.22	.05/.16	.02/.08	366	567	555	292	402	100
29000	.26/.70	.15/.58	.15/.46	.11/.34	.06/.28	.06/.21	.03/.16	.02/.07	331	553	569	298	413	103
30000	.09/.67	.11/.56	.10/.44	.06/.33	.06/.28	.06/.21	.03/.15	.02/.07	292	539	586	306	423	106
31000	.05/.65	.08/.54	.06/.42	.06/.32	.06/.27	.03/.19	.03/.15	.01/.07	247	522	600	313	434	109
32000	.04/.61	.05/.51	.05/.40	.03/.30	.03/.25	.03/.19	.03/.14	.01/.07	178	503	618	321	448	113
33000	.03/.59	.03/.49	.03/.38	.03/.28	.03/.25	.03/.19	.02/.13	.01/.07	111	488	632	328	458	116

FREE FLIGHT ROCKET

5 KT

COVERAGE TABLE (Distances in meters)

TOF < 40 SEC
(8-59)

PERSONNEL IN OPEN FOXHOLES - LATENT LETHALITY LOW AIRBURST

RANGE	EFFECTIVENESS RADIUS OF TARGET								PROB MIN RD	EXPT RD	ACCURACY DATA			
	700	900	1050	1400	1600	1850	2300	3200			CD/90	CEP	HOB	PEH
5000	.95/.97	.90/.92	.81/.86	.55/.57	.41/.46	.30/.32	.20/.22	.10/.12	1043	1046	204	108	140	25
7000	.95/.97	.90/.92	.80/.85	.55/.57	.41/.45	.30/.32	.20/.22	.10/.12	1040	1047	237	130	161	31
9000	.95/.97	.88/.91	.78/.84	.55/.57	.41/.44	.30/.32	.20/.22	.10/.12	1028	1043	266	147	185	38
10000	.93/.97	.87/.91	.77/.83	.55/.57	.41/.44	.30/.32	.20/.22	.10/.12	1023	1041	283	156	196	41
11000	.93/.96	.86/.91	.77/.82	.54/.57	.41/.44	.30/.32	.20/.22	.10/.12	1021	1037	295	162	206	44
12000	.92/.96	.85/.90	.76/.82	.53/.56	.40/.44	.30/.32	.20/.22	.10/.12	1011	1033	311	171	220	48
13000	.92/.96	.84/.90	.75/.81	.51/.56	.40/.44	.30/.32	.18/.22	.10/.12	1004	1029	325	179	231	51
14000	.91/.96	.82/.89	.74/.81	.51/.56	.40/.43	.30/.32	.18/.22	.10/.12	995	1026	341	187	241	54
15000	.91/.95	.81/.89	.73/.80	.50/.55	.38/.43	.28/.32	.17/.21	.08/.12	986	1021	355	194	252	57
16000	.90/.95	.80/.88	.71/.79	.49/.55	.38/.43	.27/.31	.17/.21	.08/.12	974	1015	371	202	266	61
17000	.90/.94	.79/.87	.70/.78	.47/.53	.36/.41	.27/.31	.16/.21	.07/.11	964	1010	385	209	276	64
18000	.88/.94	.77/.87	.69/.77	.47/.53	.36/.41	.26/.31	.16/.21	.07/.11	953	1005	400	217	287	67
19000	.87/.94	.76/.86	.67/.77	.45/.53	.35/.41	.26/.30	.16/.20	.06/.11	942	999	414	223	297	70
20000	.86/.93	.75/.85	.66/.76	.45/.52	.33/.40	.25/.30	.15/.20	.06/.11	926	989	431	232	311	74
21000	.85/.92	.73/.84	.64/.75	.42/.51	.32/.40	.25/.29	.16/.20	.06/.11	913	983	445	239	322	77
22000	.85/.92	.71/.83	.62/.74	.40/.50	.32/.39	.23/.29	.15/.19	.06/.10	900	976	461	246	332	80
23000	.81/.91	.69/.82	.61/.73	.40/.50	.30/.38	.22/.29	.15/.19	.06/.10	886	969	475	253	343	83
24000	.79/.90	.67/.81	.58/.72	.40/.49	.30/.38	.21/.28	.13/.18	.06/.10	867	959	493	262	357	87
25000	.77/.89	.65/.79	.56/.70	.35/.47	.27/.36	.20/.27	.13/.18	.06/.09	846	949	507	269	371	91
26000	.75/.88	.63/.79	.54/.69	.35/.47	.27/.36	.20/.27	.13/.18	.06/.09	836	943	523	276	378	93
27000	.72/.87	.61/.77	.52/.68	.35/.47	.26/.36	.20/.27	.11/.17	.05/.09	819	934	538	283	388	96
28000	.69/.86	.57/.76	.50/.67	.31/.45	.25/.35	.17/.26	.11/.17	.05/.09	795	922	555	292	402	100
29000	.66/.85	.55/.75	.47/.65	.30/.45	.22/.35	.17/.26	.10/.17	.05/.09	776	912	569	298	413	103
30000	.64/.83	.52/.73	.44/.64	.30/.44	.21/.34	.16/.25	.10/.17	.05/.08	757	902	586	306	423	106
31000	.60/.82	.50/.72	.43/.63	.26/.42	.21/.33	.15/.25	.10/.16	.05/.08	736	892	600	313	434	109
32000	.56/.80	.46/.70	.39/.61	.25/.41	.20/.32	.15/.24	.08/.16	.05/.08	707	877	618	321	448	113
33000	.52/.79	.43/.69	.35/.60	.21/.41	.16/.31	.12/.24	.07/.16	.03/.08	684	865	632	328	458	116

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED BRG	LT DAM TO BLDG	LT ACFT OBSN UTIL HEL	IN FLIGHT		FOREST		WILDLAND FIRES	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER				OV-1B ASLT HEL	OV-1B CARGO HEL	DECID BLOWDOWN HEL	CONIF BLOWDOWN HEL	CLASS I	CLASS IV
5000	6500	5800	3900	3900	3700	2900	3400	3100	1800	1000	4500	5600	6000	4500	2200	1500	4500	2900
7000	6500	5900	4000	3900	3700	2900	3500	3200	1800	1000	4600	5600	6000	4500	2200	1600	4500	2900
9000	6500	5900	4000	4000	3700	3000	3700	3300	1800	1000	4800	5600	6000	4500	2300	1600	4500	2900
10000	6400	5900	4000	4000	3700	3000	3800	3400	1900	1000	4900	5600	6000	4500	2300	1700	4500	2900
11000	6400	5900	4000	4000	3700	3000	3800	3500	1900	1000	4900	5600	6000	4500	2300	1700	4500	2900
12000	6400	6000	4100	4000	3800	3000	4000	3500	1900	1000	5100	5600	6000	4500	2400	1800	4500	2900
13000	6400	6000	4100	4100	3800	3100	4000	3600	2000	1100	5100	5600	6000	4500	2400	1800	4500	2900
14000	6500	6000	4100	4100	3800	3100	4100	3700	2000	1100	5200	5600	6000	4500	2400	1900	4500	2900
15000	6500	6100	4200	4100	3900	3100	4200	3800	2000	1100	5300	5600	6000	4500	2500	1900	4500	2900
16000	6500	6100	4200	4200	3900	3200	4300	3800	2000	1100	5400	5600	6000	4500	2500	1900	4500	2900
17000	6600	6100	4300	4200	3900	3200	4400	3900	2100	1200	5400	5600	6000	4500	2600	2000	4500	2900
18000	6600	6200	4300	4200	4000	3200	4400	4000	2100	1200	5500	5600	6000	4500	2600	2000	4500	2900
19000	6600	6200	4300	4300	4000	3200	4500	4100	2100	1200	5600	5600	6000	4500	2600	2000	4500	2900
20000	6700	6200	4300	4300	4000	3300	4600	4100	2200	1200	5700	5600	6000	4500	2700	2000	4500	2900
21000	6700	6200	4300	4300	4100	3300	4700	4200	2200	1200	5700	5600	6000	4500	2700	2000	4500	2900
22000	6700	6300	4400	4300	4100	3300	4700	4300	2200	1200	5800	5600	6000	4500	2700	2000	4500	3000
23000	6800	6300	4400	4400	4100	3400	4800	4300	2300	1200	5800	5600	6000	4500	2800	2000	4500	3000
24000	6800	6300	4400	4400	4100	3400	4900	4400	2300	1200	5900	5600	6000	4500	2800	2000	4500	3000
25000	6800	6400	4500	4400	4200	3400	5000	4400	2300	1200	6000	5600	6000	4500	2800	2000	4500	3000
26000	6800	6400	4500	4500	4200	3500	5000	4500	2400	1300	6000	5600	6000	4400	2800	2000	4500	3000
27000	6900	6400	4500	4500	4200	3500	5100	4500	2400	1300	6100	5600	6000	4400	2800	2100	4500	3000
28000	6900	6500	4600	4500	4300	3500	5100	4600	2400	1300	6200	5600	6000	4400	2800	2100	4500	3000
29000	6900	6500	4600	4600	4300	3600	5200	4700	2400	1300	6200	5600	6000	4400	2900	2100	4500	3000
30000	7000	6500	4600	4600	4300	3600	5300	4700	2500	1300	6200	5600	6000	4400	2900	2100	4500	3000
31000	7000	6600	4700	4600	4400	3600	5300	4800	2500	1300	6300	5600	6000	4500	2900	2100	4500	3000
32000	7000	6600	4700	4700	4400	3700	5400	4800	2500	1300	6300	5600	6000	4500	2900	2100	4500	3000
33000	7100	6600	4700	4700	4400	3700	5400	4800	2600	1300	6400	5600	6000	4500	2900	2100	4500	3000

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

FREE FLIGHT ROCKET

5 KT

TOF > 40 SEC

(8-59)

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE PERMANENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	90% VERTICAL	
	100	300	500	600	750	900	1100	1600					BRACKET	
22000	.49/.86	.42/.78	.34/.63	.29/.54	.21/.41	.17/.31	.11/.21	.05/.10	360	479	461	246	135	432
24000	.42/.84	.39/.77	.33/.63	.29/.54	.22/.42	.18/.31	.11/.21	.05/.10	355	485	493	262	135	425
26000	.37/.83	.37/.76	.32/.62	.29/.54	.23/.42	.19/.32	.12/.21	.06/.10	355	492	523	276	135	417
28000	.32/.82	.33/.75	.31/.61	.28/.54	.23/.42	.19/.32	.12/.22	.06/.11	401	497	555	292	135	410
30000	.27/.80	.31/.73	.30/.61	.28/.53	.23/.42	.20/.32	.13/.22	.06/.11	401	502	586	306	135	402
32000	.20/.78	.27/.72	.28/.59	.26/.52	.23/.42	.20/.32	.13/.22	.06/.11	401	505	618	321	135	395
34000	.14/.76	.24/.70	.26/.58	.25/.52	.22/.42	.20/.32	.14/.22	.06/.11	401	509	649	336	135	386
36000	.10/.74	.20/.68	.24/.57	.24/.51	.22/.41	.20/.32	.14/.23	.06/.11	401	511	680	350	135	380
38000	.07/.72	.17/.66	.21/.56	.22/.50	.21/.41	.19/.32	.14/.23	.06/.11	401	514	712	366	135	371
40000	.05/.70	.14/.64	.19/.54	.21/.49	.20/.40	.19/.32	.14/.23	.06/.11	441	515	743	380	135	364
42000	.04/.68	.11/.62	.17/.53	.19/.48	.19/.39	.18/.32	.14/.23	.07/.11	441	517	775	396	135	356
44000	.03/.65	.08/.60	.15/.52	.17/.46	.18/.39	.17/.31	.14/.23	.07/.11	441	518	806	410	135	349
46000	.02/.63	.06/.59	.13/.50	.15/.45	.17/.38	.17/.31	.14/.22	.07/.11	441	520	839	426	135	341
48000	.02/.61	.05/.57	.11/.49	.13/.44	.16/.37	.16/.31	.14/.22	.07/.11	441	521	870	440	135	334
50000	.01/.59	.04/.55	.09/.47	.12/.43	.15/.36	.15/.30	.13/.22	.07/.11	441	522	902	455	135	325
52000	.01/.57	.03/.53	.07/.46	.10/.42	.13/.36	.14/.30	.13/.22	.07/.11	441	523	934	470	135	325
54000	.00/.55	.03/.51	.06/.45	.08/.41	.12/.35	.13/.29	.13/.22	.07/.11	441	524	966	485	135	325
56000	.00/.53	.02/.49	.05/.43	.07/.40	.10/.34	.12/.29	.12/.22	.07/.11	441	524	998	500	135	325
58000	.00/.52	.02/.49	.05/.43	.06/.39	.10/.34	.12/.29	.12/.22	.07/.11	441	526	1010	519	135	325
60000	.00/.51	.02/.48	.04/.42	.06/.39	.09/.33	.11/.28	.12/.22	.07/.11	441	527	1031	519	135	325

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEF	90% VERTICAL	
	100	300	400	950	1100	1300	1500	2200					BRACKET	
22000	.94/.96	.83/.93	.75/.90	.39/.51	.30/.40	.21/.29	.15/.21	.06/.11	591	680	461	246	135	432
24000	.91/.96	.80/.92	.73/.89	.40/.51	.29/.40	.21/.30	.16/.22	.06/.11	589	685	493	262	135	425
26000	.90/.95	.78/.92	.70/.89	.40/.51	.29/.40	.22/.30	.16/.22	.06/.11	589	689	523	276	135	417
28000	.86/.94	.75/.91	.67/.88	.39/.51	.30/.40	.22/.30	.16/.22	.06/.11	621	693	555	292	135	410
30000	.83/.93	.71/.90	.65/.86	.39/.51	.30/.41	.23/.30	.16/.23	.07/.11	621	696	586	306	135	402
32000	.78/.92	.67/.88	.61/.85	.38/.51	.30/.41	.23/.31	.17/.23	.06/.11	621	698	618	321	135	395
34000	.73/.91	.63/.87	.58/.84	.37/.50	.30/.40	.23/.31	.17/.23	.06/.11	621	701	649	336	135	386
36000	.67/.90	.59/.86	.54/.83	.36/.50	.30/.40	.23/.31	.17/.23	.07/.11	621	702	680	350	135	380
38000	.61/.88	.54/.84	.51/.81	.35/.49	.30/.40	.23/.31	.17/.23	.07/.11	621	704	712	366	135	371
40000	.54/.87	.49/.83	.47/.80	.34/.49	.29/.40	.23/.31	.17/.23	.07/.11	650	705	743	380	135	364
42000	.47/.85	.45/.81	.43/.78	.33/.48	.29/.40	.23/.31	.18/.23	.07/.11	650	706	775	396	135	356
44000	.40/.83	.39/.79	.39/.76	.31/.48	.28/.39	.23/.31	.18/.23	.07/.11	650	707	806	410	135	349
46000	.33/.82	.35/.78	.35/.75	.30/.47	.27/.39	.23/.31	.18/.23	.07/.11	650	708	839	426	135	341
48000	.26/.80	.30/.76	.32/.73	.29/.46	.27/.39	.22/.30	.18/.23	.07/.11	650	709	870	440	135	334
50000	.20/.78	.26/.74	.28/.71	.27/.46	.26/.38	.22/.30	.18/.23	.07/.11	650	709	902	455	135	325
52000	.15/.76	.22/.72	.25/.70	.26/.45	.25/.38	.22/.30	.18/.23	.07/.11	650	710	934	470	135	325
54000	.11/.74	.18/.71	.21/.68	.25/.44	.24/.38	.21/.30	.18/.23	.07/.11	650	711	966	485	135	325
56000	.08/.72	.15/.69	.18/.66	.24/.43	.23/.37	.21/.30	.17/.23	.07/.11	650	711	998	500	135	325
58000	.07/.71	.14/.68	.17/.66	.23/.43	.23/.37	.21/.30	.17/.23	.07/.11	650	712	1010	508	135	325
60000	.06/.70	.12/.67	.15/.64	.23/.43	.22/.37	.21/.29	.17/.23	.08/.12	650	713	1031	519	135	325

FREE FLIGHT ROCKET

5 KT

COVERAGE TABLE (Distances in meters)

TOF > 40 SEC
(8-59)

PERSONNEL IN OPEN FOXHOLES - LATENT LETHALITY LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	90% VERTICAL BRACKET	
	400	700	900	1400	1600	1850	2300	3200						
22000	.95/.97	.86/.93	.75/.85	.45/.52	.35/.41	.26/.31	.16/.20	.07/.11	935	997	461	246	135	432
24000	.95/.97	.85/.93	.74/.85	.45/.53	.36/.41	.26/.31	.16/.20	.07/.11	932	1001	493	262	135	425
26000	.95/.97	.83/.92	.72/.84	.46/.53	.36/.41	.26/.31	.16/.21	.07/.11	932	1004	523	276	135	417
28000	.94/.96	.82/.92	.71/.84	.45/.53	.36/.42	.27/.31	.16/.21	.07/.11	955	1007	555	292	135	410
30000	.93/.96	.80/.91	.70/.83	.45/.53	.36/.42	.27/.31	.16/.21	.07/.11	955	1009	586	306	135	402
32000	.92/.96	.79/.90	.68/.82	.45/.52	.36/.42	.27/.31	.16/.21	.08/.12	955	1010	618	321	135	395
34000	.91/.95	.77/.90	.67/.81	.45/.52	.36/.42	.27/.31	.16/.21	.08/.12	955	1012	649	336	135	386
36000	.89/.95	.75/.89	.65/.81	.45/.52	.36/.42	.27/.31	.17/.21	.08/.12	955	1013	680	350	135	380
38000	.87/.94	.73/.88	.63/.80	.44/.52	.36/.42	.28/.31	.17/.21	.08/.12	955	1014	712	366	135	371
40000	.85/.94	.71/.87	.62/.79	.43/.52	.36/.42	.28/.31	.17/.21	.08/.12	975	1015	743	380	135	364
42000	.83/.93	.68/.86	.60/.78	.43/.51	.36/.42	.28/.31	.17/.21	.08/.12	975	1016	775	396	135	356
44000	.80/.92	.66/.85	.58/.77	.42/.51	.36/.41	.28/.31	.17/.21	.09/.12	975	1016	806	410	135	349
46000	.77/.92	.64/.84	.56/.76	.41/.51	.36/.41	.28/.31	.17/.21	.09/.12	975	1017	839	426	135	341
48000	.74/.91	.61/.83	.55/.75	.41/.50	.35/.41	.28/.31	.17/.21	.09/.12	975	1017	870	440	135	334
50000	.71/.90	.59/.82	.53/.74	.40/.50	.35/.41	.27/.31	.17/.21	.09/.12	975	1018	902	455	135	325
52000	.67/.89	.56/.81	.51/.73	.40/.49	.34/.41	.27/.31	.17/.21	.09/.12	975	1018	934	470	135	325
54000	.64/.88	.54/.80	.49/.72	.39/.49	.33/.41	.27/.31	.17/.21	.09/.12	975	1018	966	485	135	325
56000	.61/.86	.52/.79	.47/.71	.38/.49	.33/.40	.27/.31	.17/.21	.09/.12	975	1018	998	500	135	325
58000	.59/.86	.51/.78	.46/.71	.37/.48	.33/.40	.27/.31	.17/.21	.10/.12	975	1019	1010	508	135	325
60000	.56/.85	.49/.77	.45/.70	.37/.48	.32/.40	.27/.31	.17/.21	.10/.12	975	1020	1031	519	135	325

SAFETY DISTANCE TABLE (Distances in meters)

T R O O P S A F E T Y (M S D) ----- P R E C L U D E (L S D) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED BRG	LT DAM TO BLDG	LT ACFT IN FLIGHT				FOREST		WILDLAND FIRES	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER			OBSN UTIL HEL	ASLT HEL	CARGO HEL	OV-1B HEL	BLOWDOWN DECID	CONIF	CLASS I	CLASS IV
22000	6700	6300	4400	4300	4100	3300	4600	4200	2200	1200	5600	5600	6000	4500	2700	2000	4500	3000	
24000	6800	6300	4400	4400	4200	3400	4600	4200	2300	1200	5500	5600	6000	4500	2700	2000	4500	3000	
26000	6800	6400	4500	4500	4200	3500	4700	4200	2400	1300	5500	5600	6000	4500	2700	2000	4500	3000	
28000	6900	6500	4600	4500	4300	3500	4700	4300	2400	1300	5500	5600	6000	4500	2700	2100	4500	3000	
30000	7000	6500	4600	4600	4300	3600	4800	4400	2500	1300	5500	5600	6000	4500	2700	2100	4500	3000	
32000	7000	6600	4700	4700	4400	3700	4900	4400	2500	1300	5500	5600	6000	4500	2700	2100	4500	3000	
34000	7100	6700	4800	4700	4500	3700	4900	4500	2600	1300	5500	5600	6000	4500	2700	2100	4600	3000	
36000	7200	6700	4800	4800	4500	3800	5000	4500	2700	1300	5400	5600	6000	4500	2700	2100	4600	3100	
38000	7200	6800	4900	4900	4600	3800	5100	4600	2700	1300	5500	5600	6000	4500	2700	2100	4600	3100	
40000	7300	6800	4900	4900	4700	3900	5100	4700	2800	1400	5500	5600	5900	4500	2800	2200	4600	3100	
42000	7400	6900	5000	5000	4700	4000	5200	4700	2900	1400	5500	5600	6000	4500	2800	2200	4600	3100	
44000	7400	7000	5100	5000	4800	4000	5200	4800	2900	1400	5500	5600	6000	4600	2800	2200	4600	3100	
46000	7500	7000	5100	5100	4800	4100	5300	4900	3000	1400	5500	5700	6000	4600	2800	2200	4700	3100	
48000	7500	7100	5200	5200	4900	4200	5400	4900	3000	1400	5600	5700	6000	4600	2800	2200	4700	3200	
50000	7600	7200	5300	5200	5000	4200	5400	5000	3100	1400	5600	5700	6100	4600	2800	2200	4700	3200	
52000	7700	7200	5300	5300	5000	4300	5500	5000	3200	1400	5600	5700	6100	4600	2800	2300	4700	3200	
54000	7700	7300	5400	5400	5100	4400	5600	5100	3200	1400	5600	5800	6100	4600	2900	2300	4700	3200	
56000	7800	7400	5400	5400	5200	4400	5600	5200	3300	1500	5600	5800	6100	4700	2900	2300	4700	3200	
58000	7800	7400	5500	5400	5200	4400	5600	5200	3300	1500	5600	5800	6100	4700	2900	2300	4800	3200	
60000	7800	7400	5500	5500	5200	4500	5700	5200	3400	1500	5700	5800	6100	4700	2900	2300	4800	3200	

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

FREE FLIGHT ROCKET

20 KT

TOF < 40 SEC

(9-105)

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE PERMANENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN	EXPT	ACCURACY DATA					
	RADIUS OF TARGET										RD	RD	CD/90	CEP	HOB	PEH
	300	500	700	950	1050	1200	1450	2050								
5000	.95/.97	.92/.96	.79/.84	.55/.57	.45/.47	.35/.37	.21/.26	.10/.12	702	709	204	108	171	25		
7000	.95/.97	.90/.95	.76/.82	.52/.56	.45/.47	.35/.37	.21/.24	.10/.12	690	703	237	130	192	31		
9000	.95/.97	.88/.94	.72/.80	.50/.55	.42/.46	.31/.36	.21/.24	.10/.12	672	695	266	147	217	38		
10000	.95/.97	.80/.93	.71/.79	.49/.54	.41/.45	.31/.35	.21/.24	.10/.12	664	691	283	156	227	41		
11000	.95/.97	.85/.92	.69/.78	.47/.53	.40/.45	.30/.34	.20/.23	.10/.12	654	686	295	162	238	44		
12000	.95/.97	.85/.91	.66/.77	.40/.52	.37/.44	.28/.33	.20/.23	.10/.12	641	679	311	171	252	48		
13000	.94/.96	.81/.90	.64/.75	.44/.52	.36/.43	.28/.33	.18/.22	.08/.12	630	673	325	179	262	51		
14000	.92/.96	.78/.89	.62/.74	.42/.50	.35/.42	.26/.33	.18/.22	.08/.12	614	667	341	187	273	54		
15000	.91/.95	.76/.88	.59/.73	.40/.50	.32/.41	.25/.32	.17/.21	.07/.11	605	661	355	194	283	57		
16000	.88/.95	.72/.87	.56/.71	.40/.48	.31/.40	.25/.31	.16/.21	.07/.11	588	652	371	202	297	61		
17000	.86/.94	.70/.85	.54/.69	.35/.47	.30/.39	.24/.31	.15/.21	.06/.11	574	644	385	209	308	64		
18000	.85/.93	.68/.84	.51/.68	.35/.46	.27/.38	.21/.29	.15/.20	.06/.11	559	636	400	217	318	67		
19000	.80/.92	.65/.82	.49/.60	.31/.44	.26/.38	.20/.29	.13/.19	.06/.10	543	628	414	223	329	70		
20000	.75/.90	.58/.80	.45/.64	.30/.43	.25/.36	.17/.28	.12/.19	.06/.10	520	616	431	232	343	74		
21000	.70/.89	.55/.78	.42/.62	.26/.41	.21/.35	.16/.27	.11/.19	.06/.10	502	607	445	239	353	77		
22000	.65/.87	.50/.76	.38/.60	.25/.41	.21/.34	.16/.27	.10/.18	.05/.09	483	597	461	246	364	80		
23000	.59/.85	.46/.74	.34/.59	.21/.40	.20/.33	.15/.26	.10/.18	.05/.09	463	586	475	253	374	83		
24000	.50/.83	.41/.71	.29/.56	.21/.37	.16/.32	.11/.25	.07/.17	.03/.09	434	571	493	262	388	87		
25000	.42/.80	.35/.69	.25/.54	.16/.37	.16/.31	.11/.23	.07/.17	.03/.09	402	556	507	269	402	91		
26000	.38/.78	.32/.67	.22/.52	.16/.36	.11/.29	.11/.23	.06/.16	.03/.09	386	547	523	276	409	93		
27000	.28/.76	.26/.64	.20/.50	.11/.34	.11/.28	.08/.22	.05/.15	.02/.07	359	535	538	283	420	96		
28000	.20/.72	.18/.61	.16/.48	.11/.32	.06/.28	.08/.22	.05/.15	.02/.07	320	517	555	292	434	100		
29000	.14/.70	.14/.59	.13/.46	.08/.31	.06/.27	.08/.21	.03/.14	.02/.07	289	503	569	298	444	103		
30000	.08/.67	.07/.56	.10/.44	.06/.30	.06/.26	.03/.19	.03/.14	.01/.07	254	490	586	306	455	106		
31000	.04/.64	.05/.54	.05/.42	.06/.29	.03/.24	.03/.19	.03/.14	.01/.07	215	476	600	313	465	109		
32000	.02/.60	.04/.51	.05/.40	.03/.27	.03/.23	.03/.19	.02/.13	.01/.07	157	456	618	321	479	113		
33000	.02/.58	.03/.48	.03/.38	.03/.26	.03/.23	.03/.19	.02/.12	.01/.06	105	442	632	328	490	116		

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	500	750	850	1200	1300	1500	1900	2700						
5000	.95/.97	.90/.92	.84/.87	.55/.57	.45/.47	.35/.37	.20/.22	.10/.12	884	894	204	108	171	25
7000	.95/.97	.88/.92	.81/.86	.55/.57	.45/.47	.35/.37	.20/.22	.10/.12	881	890	237	130	192	31
9000	.95/.97	.86/.91	.79/.85	.53/.56	.45/.47	.35/.37	.20/.22	.10/.12	866	884	266	147	217	38
10000	.95/.97	.85/.90	.77/.84	.51/.56	.45/.47	.32/.36	.20/.22	.10/.12	859	880	283	156	227	41
11000	.95/.97	.84/.90	.77/.83	.51/.55	.43/.47	.32/.36	.20/.22	.10/.12	852	876	295	162	238	44
12000	.95/.97	.82/.89	.76/.83	.50/.55	.43/.47	.31/.36	.20/.22	.10/.12	841	871	311	171	252	48
13000	.94/.97	.81/.89	.74/.82	.49/.54	.41/.46	.31/.35	.18/.22	.08/.12	832	866	325	179	262	51
14000	.93/.96	.79/.88	.72/.81	.47/.53	.41/.46	.30/.34	.18/.22	.08/.12	822	862	341	187	273	54
15000	.92/.96	.78/.87	.71/.80	.46/.53	.40/.45	.30/.34	.17/.21	.07/.11	812	856	355	194	283	57
16000	.91/.96	.76/.86	.69/.79	.45/.52	.37/.44	.28/.33	.17/.21	.06/.11	799	849	371	202	297	61
17000	.90/.95	.74/.85	.67/.78	.44/.51	.37/.44	.28/.33	.16/.21	.06/.11	787	843	385	209	308	64
18000	.86/.95	.72/.84	.66/.77	.42/.50	.35/.43	.26/.33	.16/.20	.06/.11	775	837	400	217	318	67
19000	.87/.94	.70/.83	.64/.76	.40/.50	.35/.43	.25/.32	.16/.20	.06/.10	762	830	414	223	329	70
20000	.85/.93	.68/.82	.61/.74	.40/.48	.32/.41	.25/.31	.15/.19	.06/.10	745	821	431	232	343	74
21000	.83/.93	.66/.81	.59/.74	.36/.48	.31/.41	.24/.31	.15/.19	.06/.10	731	814	445	239	353	77
22000	.80/.92	.63/.79	.57/.72	.35/.47	.30/.40	.22/.31	.13/.19	.06/.09	716	806	461	246	364	80
23000	.78/.91	.61/.78	.54/.71	.35/.45	.30/.39	.22/.30	.13/.18	.06/.09	701	798	475	253	374	83
24000	.74/.90	.58/.76	.51/.69	.31/.44	.26/.38	.20/.29	.12/.18	.05/.09	680	787	493	262	388	87
25000	.71/.88	.54/.74	.49/.67	.30/.44	.26/.37	.20/.29	.11/.18	.05/.09	657	775	507	269	402	91
26000	.68/.87	.52/.73	.46/.66	.30/.42	.25/.37	.17/.28	.10/.18	.05/.09	645	768	523	276	409	93
27000	.64/.86	.49/.72	.45/.65	.26/.42	.21/.36	.16/.27	.10/.18	.05/.08	626	759	538	283	420	96
28000	.59/.84	.46/.70	.41/.63	.25/.41	.21/.35	.16/.27	.10/.16	.05/.08	599	745	555	292	434	100
29000	.55/.82	.43/.68	.38/.61	.21/.40	.21/.34	.15/.26	.07/.16	.03/.08	578	734	569	298	444	103
30000	.51/.80	.40/.66	.34/.60	.21/.38	.16/.33	.12/.26	.07/.16	.03/.08	556	722	586	306	455	106
31000	.45/.79	.37/.65	.30/.58	.21/.37	.16/.32	.11/.25	.07/.16	.03/.08	533	711	600	313	465	109
32000	.39/.76	.29/.62	.25/.56	.16/.36	.16/.32	.11/.23	.05/.14	.02/.07	500	692	618	321	479	113
33000	.35/.74	.25/.60	.22/.54	.15/.35	.11/.30	.10/.23	.05/.14	.02/.07	473	680	632	328	490	116

FREE FLIGHT ROCKET

20 KT

TOF < 40 SEC

(9-105)

COVERAGE TABLE (Distances in meters)

PERSONNEL IN OPEN FOXHOLES - LATENT LETHALITY
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	800	1150	1250	1650	1850	2150	2650	3200						
5000	.95/.97	.85/.87	.80/.82	.55/.57	.40/.42	.30/.32	.20/.22	.10/.12	1201	1204	204	108	171	25
7000	.95/.97	.85/.87	.80/.82	.52/.56	.40/.42	.30/.32	.20/.22	.10/.12	1193	1202	237	130	192	31
9000	.95/.97	.85/.87	.78/.81	.51/.55	.40/.42	.30/.32	.20/.22	.10/.12	1186	1197	266	147	217	38
10000	.95/.97	.84/.86	.77/.81	.51/.55	.40/.42	.30/.32	.20/.22	.10/.12	1181	1195	283	156	227	41
11000	.95/.97	.81/.86	.76/.81	.51/.55	.40/.42	.30/.32	.20/.22	.10/.12	1175	1192	295	162	238	44
12000	.94/.97	.81/.85	.76/.80	.51/.54	.40/.42	.30/.32	.20/.22	.10/.12	1167	1188	311	171	252	48
13000	.93/.97	.80/.85	.75/.80	.50/.54	.40/.42	.30/.32	.18/.22	.10/.12	1160	1185	325	179	262	51
14000	.92/.96	.79/.85	.75/.79	.50/.54	.40/.42	.28/.32	.18/.22	.10/.12	1152	1181	341	187	273	54
15000	.92/.96	.78/.84	.74/.79	.50/.53	.40/.42	.28/.32	.17/.21	.10/.12	1145	1178	355	194	283	57
16000	.91/.96	.77/.83	.72/.78	.48/.53	.38/.42	.27/.31	.17/.21	.10/.12	1134	1172	371	202	297	61
17000	.91/.96	.76/.83	.71/.78	.47/.52	.37/.41	.27/.31	.15/.21	.10/.12	1126	1168	385	209	308	64
18000	.91/.95	.76/.82	.70/.77	.46/.52	.37/.41	.26/.31	.16/.21	.10/.12	1117	1163	400	217	318	67
19000	.90/.95	.75/.82	.69/.76	.46/.51	.36/.41	.26/.30	.16/.21	.10/.12	1108	1157	414	223	329	70
20000	.90/.95	.73/.81	.67/.76	.45/.50	.35/.40	.26/.30	.16/.20	.10/.12	1095	1151	431	232	343	74
21000	.89/.94	.72/.80	.66/.75	.45/.50	.35/.40	.26/.30	.16/.20	.10/.12	1084	1145	445	239	353	77
22000	.88/.94	.71/.80	.65/.74	.42/.50	.35/.39	.25/.29	.16/.20	.10/.12	1074	1140	461	246	364	80
23000	.87/.93	.69/.79	.64/.74	.42/.49	.33/.39	.25/.29	.15/.19	.10/.12	1063	1134	475	253	374	83
24000	.86/.93	.68/.78	.62/.72	.40/.48	.32/.39	.23/.28	.15/.19	.10/.12	1047	1126	493	262	388	87
25000	.85/.92	.66/.77	.61/.72	.40/.48	.30/.38	.23/.28	.15/.19	.10/.12	1031	1117	507	269	402	91
26000	.83/.92	.65/.76	.59/.71	.40/.48	.30/.37	.22/.28	.15/.19	.10/.12	1022	1113	523	276	409	93
27000	.82/.91	.63/.76	.58/.70	.37/.46	.30/.37	.21/.28	.15/.19	.10/.12	1009	1106	538	283	420	96
28000	.80/.90	.61/.75	.56/.69	.36/.46	.27/.36	.21/.28	.13/.18	.08/.12	991	1096	555	292	434	100
29000	.78/.90	.59/.74	.55/.68	.36/.46	.27/.36	.20/.27	.13/.18	.08/.12	976	1089	569	298	444	103
30000	.76/.89	.58/.73	.52/.67	.35/.45	.27/.36	.20/.26	.13/.18	.08/.12	962	1081	586	306	455	106
31000	.75/.88	.56/.72	.51/.66	.32/.44	.26/.35	.20/.26	.12/.17	.08/.12	946	1073	600	313	465	109
32000	.72/.87	.54/.70	.48/.65	.31/.43	.25/.34	.17/.26	.11/.17	.07/.11	925	1059	618	321	479	113
33000	.70/.86	.52/.69	.47/.64	.30/.42	.25/.34	.17/.26	.11/.17	.07/.11	908	1050	632	328	490	116

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED BRG	LT DAM TO BLDG	LT ACFT OBSN UTIL HEL	IN FLIGHT				WILDLAND FIRES	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER				ASLT HEL	CARGO HEL	OV-1B HEL	FOREST BLOWDOWN DECID CONIF	CLASS I	CLASS IV
5000	10900	10000	6200	5800	5400	4400	4800	4200	2000	1400	6500	9000	9300	8700	3300	2400	7100	4800
7000	10900	10000	6200	5900	5500	4400	4900	4400	2000	1500	6600	9000	9300	8700	3400	2500	7100	4800
9000	10900	10000	6200	5900	5500	4500	5100	4500	2100	1500	6800	9000	9300	8700	3500	2600	7100	4800
10000	10900	10000	6200	5900	5500	4500	5100	4600	2100	1500	6900	9000	9300	8700	3500	2600	7100	4800
11000	11000	10000	6300	5900	5500	4500	5200	4700	2100	1500	7000	9000	9300	8700	3500	2600	7100	4800
12000	11000	10100	6300	6000	5600	4600	5300	4800	2200	1500	7100	9000	9300	8700	3600	2700	7100	4800
13000	11000	10100	6300	6000	5600	4600	5400	4800	2200	1500	7200	9000	9300	8700	3600	2700	7100	4800
14000	11100	10100	6400	6000	5600	4600	5500	4900	2300	1500	7200	9000	9300	8700	3700	2700	7100	4800
15000	11100	10200	6400	6100	5700	4600	5600	5000	2300	1500	7300	9000	9300	8700	3700	2700	7100	4800
16000	11100	10200	6400	6100	5700	4700	5700	5100	2400	1500	7400	9000	9300	8700	3800	2800	7100	4800
17000	11100	10200	6400	6100	5700	4700	5700	5200	2400	1600	7500	9000	9300	8700	3800	2800	7100	4800
18000	11200	10300	6500	6200	5700	4700	5800	5200	2500	1600	7600	9000	9300	8700	3800	2900	7100	4800
19000	11200	10300	6500	6200	5800	4800	5900	5300	2500	1600	7600	9000	9300	8700	3800	2900	7100	4800
20000	11200	10300	6500	6200	5800	4800	6000	5400	2600	1600	7700	9000	9300	8700	3800	3000	7100	4800
21000	11300	10400	6600	6200	5800	4800	6100	5500	2600	1600	7800	9000	9300	8700	4000	3000	7100	4800
22000	11300	10400	6600	6300	5900	4900	6200	5600	2700	1700	7900	9000	9300	8700	4000	3000	7100	4800
23000	11300	10400	6600	6300	5900	4900	6300	5600	2700	1700	8000	9000	9300	8700	4000	3100	7100	4800
24000	11400	10400	6700	6300	5900	4900	6400	5700	2800	1700	8100	9000	9300	8700	4000	3100	7100	4800
25000	11400	10500	6700	6400	6000	4900	6400	5800	2800	1700	8200	9000	9300	8700	4000	3100	7100	4800
26000	11400	10500	6700	6400	6000	5000	6500	5800	2800	1800	8200	9000	9300	8700	4100	3200	7100	4800
27000	11500	10500	6700	6400	6000	5000	6500	5900	2900	1800	8300	9000	9300	8700	4100	3200	7100	4800
28000	11500	10600	6800	6500	6100	5000	6700	6000	2900	1800	8400	9000	9300	8700	4200	3200	7100	4800
29000	11500	10600	6800	6500	6100	5100	6700	6100	3000	1800	8400	9000	9300	8700	4200	3300	7100	4800
30000	11500	10600	6800	6500	6100	5100	6800	6100	3000	1900	8500	9000	9300	8700	4300	3300	7100	4800
31000	11600	10700	6900	6500	6100	5100	6900	6200	3100	1900	8600	9000	9300	8700	4300	3300	7100	4800
32000	11600	10700	6900	6600	6200	5200	7000	6300	3200	1900	8700	9000	9300	8700	4400	3400	7100	4800
33000	11600	10700	6900	6600	6200	5200	7000	6300	3200	1900	8700	9000	9300	8700	4400	3400	7100	4800

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

FREE FLIGHT ROCKET

20 KT

TOF > 40 SEC

(9-105)

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE PERMANENT
LOW AIRBURST

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
RANGE	RADIUS OF TARGET										CD/90	CEP	90% VERTICAL BRACKET	
	100	200	300	450	1000	1150	1450	2050						
22000	.87/.94	.80/.92	.72/.90	.36/.51	.26/.39	.19/.31	.12/.19	.05/.10	496	612	461	246	165	482
24000	.84/.93	.77/.91	.69/.89	.36/.51	.27/.40	.20/.31	.12/.19	.05/.10	534	618	493	262	165	475
26000	.80/.92	.74/.91	.66/.88	.36/.51	.27/.40	.21/.32	.13/.19	.06/.10	534	624	523	276	165	467
28000	.75/.91	.69/.89	.62/.87	.36/.51	.27/.40	.21/.32	.13/.20	.06/.10	534	628	555	292	165	460
30000	.70/.90	.65/.88	.59/.86	.35/.51	.28/.41	.22/.32	.14/.20	.06/.10	534	633	586	306	165	452
32000	.64/.89	.60/.87	.55/.84	.35/.51	.28/.41	.22/.32	.14/.20	.06/.11	534	636	618	321	165	445
34000	.57/.87	.55/.86	.51/.83	.34/.50	.28/.40	.22/.32	.15/.21	.06/.11	563	639	649	336	165	436
36000	.50/.86	.49/.84	.46/.81	.32/.50	.28/.40	.22/.32	.15/.21	.06/.11	563	641	680	350	165	430
38000	.43/.84	.43/.82	.42/.80	.31/.49	.27/.40	.22/.32	.15/.21	.06/.11	563	643	712	366	165	421
40000	.36/.82	.37/.81	.37/.78	.30/.48	.27/.40	.22/.32	.16/.21	.06/.11	563	645	743	380	165	414
42000	.31/.81	.32/.79	.32/.76	.29/.48	.26/.39	.22/.32	.16/.21	.07/.11	563	647	775	396	165	406
44000	.23/.79	.26/.77	.28/.74	.27/.47	.26/.39	.22/.31	.16/.21	.07/.11	563	648	806	410	165	399
46000	.17/.77	.21/.75	.24/.73	.26/.46	.25/.39	.21/.31	.16/.21	.07/.11	591	649	839	426	165	391
48000	.13/.75	.16/.73	.20/.71	.25/.46	.24/.38	.21/.31	.16/.21	.07/.11	591	650	870	440	165	384
50000	.09/.73	.12/.71	.17/.69	.24/.45	.23/.38	.21/.31	.16/.21	.07/.11	591	651	902	455	165	375
52000	.06/.71	.09/.69	.14/.67	.23/.44	.22/.37	.20/.31	.16/.21	.07/.11	591	652	934	470	165	369
54000	.05/.69	.07/.67	.11/.65	.22/.43	.21/.37	.20/.30	.16/.21	.07/.11	591	653	966	485	165	365
56000	.04/.67	.05/.65	.08/.63	.20/.43	.20/.36	.19/.30	.16/.21	.07/.11	591	653	999	500	165	365
58000	.04/.66	.05/.65	.07/.63	.20/.42	.20/.36	.19/.30	.16/.21	.07/.11	591	655	1010	508	165	365
60000	.03/.65	.04/.63	.06/.62	.19/.42	.19/.36	.19/.30	.16/.21	.07/.11	591	656	1031	519	165	365

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	90% VERTICAL BRACKET	
	300	500	700	1150	1300	1500	1900	2700						
22000	.94/.96	.83/.93	.70/.84	.42/.52	.34/.42	.24/.31	.15/.19	.06/.10	726	818	461	246	165	482
24000	.92/.96	.82/.92	.68/.84	.42/.52	.34/.42	.25/.32	.15/.20	.06/.10	756	823	493	262	165	475
26000	.91/.96	.80/.92	.67/.83	.42/.52	.25/.42	.25/.32	.16/.20	.06/.10	756	828	523	276	165	467
28000	.90/.95	.78/.91	.65/.82	.42/.52	.25/.42	.26/.32	.16/.20	.06/.10	756	832	555	292	165	460
30000	.87/.94	.76/.90	.64/.81	.42/.52	.25/.43	.26/.33	.16/.20	.06/.11	756	835	586	306	165	452
32000	.85/.94	.73/.89	.62/.81	.42/.52	.25/.43	.26/.33	.16/.20	.06/.11	756	837	618	321	165	445
34000	.82/.93	.71/.89	.60/.80	.41/.52	.24/.43	.26/.33	.16/.21	.07/.11	779	840	649	336	165	436
36000	.80/.92	.68/.88	.58/.79	.41/.51	.24/.42	.26/.33	.16/.21	.07/.11	779	842	680	350	165	430
38000	.76/.91	.66/.87	.56/.78	.40/.51	.24/.42	.26/.33	.16/.21	.07/.11	779	843	712	366	165	421
40000	.73/.90	.62/.85	.54/.77	.40/.51	.23/.42	.26/.33	.16/.21	.07/.11	779	845	743	380	165	414
42000	.69/.89	.59/.84	.52/.75	.39/.50	.23/.42	.26/.33	.17/.21	.07/.11	779	846	775	396	165	406
44000	.64/.88	.56/.83	.50/.74	.37/.50	.23/.42	.26/.33	.17/.21	.07/.11	779	847	806	410	165	399
46000	.60/.87	.53/.82	.47/.73	.36/.49	.22/.42	.26/.33	.17/.21	.07/.11	801	848	839	426	165	391
48000	.56/.85	.50/.80	.45/.72	.35/.49	.22/.41	.26/.33	.17/.21	.07/.11	801	848	870	440	165	384
50000	.51/.84	.46/.79	.43/.71	.34/.48	.21/.41	.26/.33	.17/.21	.07/.11	801	849	902	455	165	375
52000	.46/.82	.43/.77	.41/.69	.33/.48	.21/.41	.26/.33	.17/.21	.07/.11	801	850	934	470	165	369
54000	.41/.81	.40/.76	.38/.68	.32/.47	.20/.41	.26/.33	.17/.21	.07/.11	801	850	966	485	165	365
56000	.37/.79	.37/.75	.36/.67	.31/.47	.29/.40	.25/.33	.17/.21	.07/.11	801	851	999	500	165	365
58000	.35/.79	.36/.74	.35/.67	.31/.47	.29/.40	.25/.33	.17/.21	.08/.12	801	852	1010	508	165	365
60000	.32/.78	.34/.73	.33/.66	.30/.46	.28/.40	.25/.32	.17/.21	.08/.12	801	853	1031	519	165	365

FREE FLIGHT ROCKET

20 KT

COVERAGE TABLE (Distances in meters)

TOF > 40 SEC
(9-105)

PERSONNEL IN OPEN FOXHOLES - LATENT LETHALITY
LOW AIRBURST

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
RANGE	RADIUS OF TARGET										CD/90	CEP	90% VERTICAL BRACKET	
	600	900	1100	1650	1850	2150	2650	3200						
22000	.95/.97	.85/.92	.75/.83	.44/.50	.26/.40	.26/.40	.16/.20	.10/.12	1081	1150	461	246	165	482
24000	.95/.97	.84/.91	.74/.83	.45/.50	.26/.40	.26/.40	.16/.20	.10/.12	1102	1154	493	262	165	475
26000	.94/.97	.83/.91	.73/.83	.45/.51	.26/.41	.26/.41	.16/.20	.10/.12	1102	1157	523	276	165	467
28000	.93/.96	.82/.90	.72/.82	.45/.51	.26/.41	.26/.41	.16/.20	.10/.12	1102	1160	555	292	165	460
30000	.92/.96	.81/.90	.71/.82	.45/.51	.26/.41	.26/.41	.16/.21	.10/.12	1102	1162	586	306	165	452
32000	.91/.96	.80/.89	.70/.81	.45/.51	.26/.41	.26/.41	.16/.21	.10/.12	1102	1164	618	321	165	445
34000	.91/.96	.78/.89	.69/.81	.45/.51	.27/.41	.26/.41	.17/.21	.10/.12	1119	1166	649	336	165	436
36000	.89/.95	.77/.88	.68/.80	.45/.51	.27/.41	.26/.41	.17/.21	.10/.12	1119	1167	680	350	165	430
38000	.88/.95	.76/.87	.66/.80	.45/.51	.27/.41	.26/.41	.17/.21	.10/.12	1119	1169	712	366	165	421
40000	.86/.94	.74/.87	.65/.79	.45/.51	.27/.41	.26/.41	.17/.21	.10/.12	1119	1170	743	380	165	414
42000	.85/.94	.72/.86	.64/.78	.44/.50	.27/.41	.27/.41	.17/.21	.10/.12	1119	1171	775	396	165	406
44000	.83/.93	.70/.85	.62/.77	.44/.50	.27/.41	.27/.41	.17/.21	.10/.12	1119	1171	806	410	165	399
46000	.81/.92	.68/.85	.61/.77	.43/.50	.27/.41	.27/.41	.17/.21	.10/.12	1136	1172	839	426	165	391
48000	.79/.92	.66/.84	.59/.76	.43/.50	.26/.41	.27/.41	.17/.21	.10/.12	1136	1172	870	440	165	384
50000	.77/.91	.65/.83	.58/.75	.42/.50	.26/.41	.27/.41	.17/.21	.10/.12	1136	1173	902	455	165	375
52000	.74/.90	.63/.82	.56/.74	.42/.49	.26/.41	.27/.41	.17/.21	.10/.12	1136	1173	934	470	165	369
54000	.72/.89	.61/.81	.55/.74	.41/.49	.26/.41	.27/.41	.17/.21	.10/.12	1136	1174	966	485	165	365
56000	.70/.89	.59/.80	.53/.73	.41/.49	.25/.41	.27/.41	.17/.21	.10/.12	1136	1174	998	500	165	365
58000	.68/.88	.58/.80	.53/.72	.41/.49	.25/.41	.27/.41	.18/.21	.10/.12	1136	1175	1010	508	165	365
60000	.67/.88	.57/.79	.52/.72	.41/.48	.25/.41	.27/.41	.18/.22	.10/.12	1136	1176	1031	519	165	365

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

UNWARNED EXPOSED				WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT CARGO		FOREST BLOWDOWN DECID CONIF		WILDLAND FIRES CLASS I CLASS IV	
RANGE	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL				
22000	11500	10400	6600	6300	5900	4900	6000	5400	2600	1600	7700	9000	9300	8700	3900	2900	7100	4800
24000	11400	10400	6700	6300	5900	4900	6100	5500	2700	1600	7700	9000	9300	8700	3900	3000	7100	4800
26000	11400	10500	6700	6400	6000	5000	6200	5500	2700	1700	7700	9000	9300	8700	3900	3000	7100	4800
28000	11500	10600	6800	6500	6100	5000	6200	5600	2800	1700	7700	9000	9300	8700	3900	3000	7100	4800
30000	11500	10600	6800	6500	6100	5100	6300	5700	2900	1700	7700	9000	9300	8700	3900	3000	7100	4800
32000	11600	10700	6900	6600	6200	5200	6300	5700	2900	1700	7700	9000	9300	8700	3900	3000	7100	4800
34000	11700	10800	7000	6600	6200	5200	6300	5700	3000	1700	7500	9000	9300	8700	3900	3000	7100	4800
36000	11700	10800	7000	6700	6300	5300	6400	5800	3000	1700	7500	9000	9300	8700	3900	3000	7100	4800
38000	11800	10900	7100	6800	6400	5300	6400	5800	3100	1700	7500	9000	9300	8700	3900	3000	7100	4800
40000	11900	10900	7200	6800	6400	5400	6500	5900	3100	1700	7500	9000	9300	8700	3900	3000	7100	4800
42000	11900	11000	7200	6900	6500	5500	6600	6000	3200	1800	7500	9000	9300	8700	3900	3000	7100	4900
44000	12000	11100	7300	7000	6500	5500	6600	6000	3300	1800	7500	9000	9300	8700	4000	3100	7100	4900
46000	12000	11100	7300	7000	6600	5600	6700	6100	3300	1800	7500	9000	9300	8700	4000	3100	7100	4900
48000	12100	11200	7400	7100	6700	5700	6700	6100	3400	1800	7500	9000	9300	8700	4000	3100	7100	4900
50000	12200	11200	7500	7100	6700	5700	6800	6200	3400	1800	7500	9000	9300	8700	4000	3100	7100	4900
52000	12200	11300	7500	7200	6800	5800	6900	6300	3500	1800	7400	9000	9300	8700	4000	3100	7100	5000
54000	12300	11400	7600	7300	6900	5800	6900	6300	3600	1900	7500	9000	9300	8700	4000	3200	7100	5000
56000	12300	11400	7600	7300	6900	5900	7000	6400	3600	1900	7500	9000	9300	8700	4000	3200	7100	5000
58000	12400	11500	7700	7300	6900	5900	7000	6400	3700	1900	7500	9000	9300	8700	4000	3200	7100	5000
60000	12400	11500	7700	7400	7000	6000	7000	6400	3700	1900	7500	9000	9300	8700	4100	3200	7100	5000

GUIDED MISSILE
10 KT
(9-80)

COVERAGE TABLE
(Distances in meters)

P E R S O N N E L I N O P E N F O X H O L E S - I M M E D I A T E P E R M A N E N T
L O W A I R B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	250	400	600	800	1100	1400	1900						
50-150 Km	.04/.65	.06/.63	.12/.59	.18/.52	.20/.43	.21/.31	.15/.21	.10/.12	593	640	911	500	242	50

COVERAGE TABLE
(Distances in meters)

P E R S O N N E L I N O P E N F O X H O L E S - I M M E D I A T E T R A N S I E N T
L O W A I R B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	500	800	1000	1200	1500	1800	2500						
50-150 Km	.33/.81	.36/.73	.35/.61	.33/.52	.31/.43	.25/.30	.19/.22	.10/.12	797	834	911	500	242	50

GUIDED MISSILE

10 KT

(9-80)

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN OPEN FOXHOLES - LATENT LETHALITY

LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	400	700	1600	1800	2100	2600	3200						
50-150 Km	.84/.94	.75/.91	.64/.86	.42/.50	.36/.41	.29/.32	.18/.22	.10/.12	1129	1154	911	500	244	50

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD)										PRECLUDE (LSD)									
RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED BRG	LT DAM TO BLDG	LT ACFT OBSN UTIL HEL	IN FLIGHT OV-1B ASLT HEL	CARGO HEL	FOREST BLOWDOWN DECID CONIF	WILDLAND FIRES		CLASS I	CLASS IV
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER										
50-150 Km	9400	8800	6100	6000	5700	4800	5700	5200	3000	1600	6300	7300	7600	6500	5300	2500	4000		4200

GUIDED MISSILE

50 KT
(11-159)

COVERAGE TABLE
(Distances in meters)

P E R S O N N E L I N O P E N F O X H O L E S - I M M E D I A T E P E R M A N E N T
L O W A I R B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	500	700	1000	1200	1400	1800	2000						
50-150 Km	.27/.80	.33/.71	.33/.63	.31/.50	.29/.41	.26/.33	.17/.21	.06/.11	767	800	911	500	289	50

COVERAGE TABLE
(Distances in meters)

P E R S O N N E L I N O P E N F O X H O L E S - I M M E D I A T E T R A N S I E N T
L O W A I R B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	600	900	1300	1600	1900	2300	3200						
50-150 Km	.68/.90	.54/.82	.47/.71	.40/.52	.34/.40	.26/.30	.16/.21	.08/.12	980	1014	911	500	289	50

GUIDED MISSILE

50 KT

(11-159)

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN OPEN FOXHOLES - LATENT LETHALITY
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	300	600	900	1900	2100	2500	3100	3800						
50-150 Km	.91/.96	.82/.93	.71/.88	.44/.50	.40/.42	.27/.31	.16/.20	.10/.12	1327	1353	911	500	289	50

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT IN FLIGHT OBSN UTIL	OV-1B ASLT HEL	CARGO HEL	FOREST BLOWDOWN DECID	CONIF	WILDLAND FIRES CLASS	CLASS
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	HEL	HEL	I	IV
50-150 Km	17500	16000	10200	9300	8700	7000	7800	7600	3700	2400	9400	12700	12900	12700	5100	4100	10300	6700

GUIDED MISSILE
100 KT
(11-218)

COVERAGE TABLE
(Distances in meters)

P E R S O N N E L I N O P E N F O X H O L E S - I M M E D I A T E P E R M A N E N T
L O W A I R B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	600	800	1100	1300	1550	1900	2600						
50-150 Km	.38/.83	.37/.71	.36/.63	.33/.50	.30/.41	.24/.31	.17/.21	.08/.12	.795	860	911	500	439	50

COVERAGE TABLE
(Distances in meters)

P E R S O N N E L I N O P E N F O X H O L E S - I M M E D I A T E T R A N S I E N T
L O W A I R B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	350	600	1500	1700	2000	2500	3200						
50-150 Km	.78/.92	.71/.90	.62/.85	.40/.50	.35/.41	.26/.31	.16/.20	.10/.12	1039	1093	911	500	439	50

GUIDED MISSILE
100 KT
(11-218)

COVERAGE TABLE
 (Distances in meters)

P E R S O N N E L I N O P E N F O X H O L E S - L A T E N T L E T H A L I T Y
 L O W A I R B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	500	800	1100	2000	2300	2700	3200	4400						
50-150 Km	.91/.95	.82/.93	.72/.86	.46/.53	.38/.42	.27/.31	.20/.22	.10/.12	1426	1468	911	500	437	50

SAFETY DISTANCE TABLE
 (Distances in meters)

T R O O P S A F E T Y (M S D) ----- P R E C L U D E (L S D) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT CARGO			FOREST BLOWDOWN	WILDLAND FIRES CLASS CLASS	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	DECID	CONIF	I	IV
50-150 Km	23300	21600	14000	12500	11600	9000	9900	9000	4500	3100	12500	16900	16900	16900	6800	5400	14500	8900

MARK 50 BOMB

COVERAGE TABLE (Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE PERMANENT
LOW AIRBURST

YIELD	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	200	325	425	650	750	850	1050	1350						
3 KT [7-46]	.95/.97	.87/.94	.75/.86	.41/.54	.31/.42	.25/.33	.15/.21	.10/.13	421	474	182	100	220	50
	.49/.83	.44/.76	.41/.68	.33/.47	.27/.39	.23/.32	.15/.21	.10/.13	421	474	455	250	220	50
	.01/.44	.02/.42	.03/.39	.07/.32	.10/.29	.11/.25	.11/.19	.09/.13	421	474	911	500	220	50
	.00/.25	.00/.24	.00/.23	.00/.20	.01/.19	.02/.18	.03/.15	.05/.11	421	474	1366	750	220	50
10 KT [9-80]	.95/.97	.84/.90	.73/.82	.50/.58	.35/.43	.25/.30	.16/.20	.07/.11	593	640	182	100	242	50
	.69/.87	.59/.78	.53/.70	.43/.53	.34/.42	.25/.30	.16/.20	.07/.11	593	640	455	250	242	50
	.12/.59	.16/.54	.19/.49	.21/.41	.21/.35	.20/.27	.15/.19	.07/.11	593	640	911	500	242	50
	.01/.37	.02/.35	.02/.33	.04/.29	.06/.26	.08/.22	.10/.17	.07/.11	593	640	1366	750	242	50
100 KT [11-218]	.95/.97	.82/.88	.72/.81	.45/.54	.32/.40	.25/.30	.17/.22	.10/.12	795	860	182	100	439	50
	.86/.94	.67/.81	.61/.74	.44/.52	.32/.40	.25/.30	.17/.22	.10/.12	795	860	455	250	439	50
	.38/.75	.36/.63	.35/.59	.32/.45	.28/.37	.23/.29	.17/.21	.10/.12	795	860	911	500	439	50
	.04/.54	.11/.47	.12/.44	.16/.37	.17/.31	.17/.26	.15/.20	.10/.12	795	860	1366	750	439	50

COVERAGE TABLE (Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE TRANSIENT
LOW AIRBURST

YIELD	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	400	550	650	900	1000	1200	1500	1800						
3 KT [7-46]	.95/.97	.85/.91	.75/.82	.45/.53	.37/.44	.25/.30	.16/.20	.10/.12	603	642	182	100	220	50
	.70/.88	.60/.78	.54/.71	.41/.50	.36/.43	.25/.30	.16/.20	.10/.12	603	642	455	250	220	50
	.12/.59	.16/.54	.19/.50	.21/.39	.21/.35	.20/.27	.15/.19	.10/.12	603	642	911	500	220	50
	.01/.37	.02/.35	.02/.33	.04/.29	.06/.27	.08/.22	.10/.17	.10/.12	603	642	1366	750	220	50
10 KT [9-80]	600	800	900	1200	1350	1500	1900	2700	797	834	182	100	242	50
	.92/.96	.81/.86	.72/.79	.45/.50	.35/.40	.28/.32	.16/.21	.06/.11	797	834	455	250	242	50
	.78/.90	.66/.78	.60/.72	.43/.49	.35/.40	.28/.32	.16/.21	.06/.11	797	834	911	500	242	50
	.35/.70	.35/.61	.34/.57	.31/.43	.28/.37	.25/.30	.16/.20	.06/.11	797	834	1366	750	242	50
100 KT [11-218]	700	1100	1200	1500	1700	2000	2500	3100	1039	1093	182	100	439	50
	.95/.97	.80/.85	.71/.78	.48/.56	.38/.43	.27/.31	.16/.20	.10/.12	1039	1093	455	250	439	50
	.90/.95	.70/.79	.65/.74	.47/.55	.38/.43	.27/.31	.16/.20	.10/.12	1039	1093	911	500	439	50
	.58/.83	.48/.67	.46/.63	.40/.50	.35/.41	.26/.31	.16/.20	.10/.12	1039	1093	1366	750	439	50
	.23/.66	.27/.55	.27/.52	.27/.43	.26/.37	.22/.29	.16/.20	.10/.12	1039	1093				

MARK 50 BOMB

COVERAGE TABLE (Distances in meters)

PERSONNEL IN OPEN FOXHOLES - LATENT LETHALITY LOW AIRBURST

		EFFECTIVENESS								PROB		ACCURACY DATA			
YIELD		RADIUS OF TARGET								MIN	EXPT				
		600	900	1000	1300	1500	1700	2100	2500	RD	RD	CD/90	CEP	HOB	PEH
3 KT [7-46]		.95/.97	.82/.86	.75/.79	.48/.51	.36/.40	.27/.31	.16/.21	.10/.12	89%	92%	182	100	220	50
		.85/.93	.68/.79	.63/.73	.46/.51	.36/.40	.27/.31	.16/.21	.10/.12	89%	92%	455	250	220	50
		.44/.76	.40/.64	.39/.59	.35/.45	.31/.37	.26/.30	.16/.20	.10/.12	89%	92%	911	500	220	50
		.10/.56	.16/.49	.17/.46	.19/.38	.20/.32	.20/.27	.16/.20	.10/.12	89%	92%	1366	750	220	50
10 KT [9-80]		.800	1150	1300	1650	1850	2150	2600	3500						
		.95/.97	.82/.86	.71/.75	.47/.51	.37/.41	.26/.31	.18/.22	.10/.12	112%	115%	182	100	242	50
		.89/.94	.73/.81	.66/.72	.46/.51	.37/.41	.26/.31	.18/.22	.10/.12	112%	115%	455	250	242	50
		.61/.82	.51/.69	.48/.63	.41/.47	.35/.40	.26/.30	.18/.22	.10/.12	112%	115%	911	500	242	50
100 KT [11-218]		.29/.67	.30/.57	.30/.53	.28/.42	.27/.37	.24/.29	.17/.21	.10/.12	112%	115%	1366	750	242	50
		.1100	1500	1650	2100	2300	2700	3300	3500						
		.95/.97	.81/.84	.71/.76	.46/.51	.40/.43	.27/.31	.17/.21	.16/.18	142%	146%	182	100	439	50
		.90/.94	.75/.81	.69/.74	.46/.51	.40/.43	.27/.31	.17/.21	.16/.18	142%	146%	455	250	439	50
		.72/.86	.60/.73	.55/.67	.44/.49	.38/.42	.27/.31	.17/.21	.16/.18	142%	146%	911	500	439	50
		.47/.75	.43/.64	.41/.59	.36/.46	.33/.40	.26/.31	.17/.21	.16/.18	142%	146%	1366	750	439	50

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

YIELD	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM BLDG	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT	FOREST BLOWDOWN DECID CONIF	WILDLAND FIRES CLASS I CLASS IV	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL		
3 KT [7-46]	5000	4700	3100	3100	2800	2300	3200	2900	1600*	800	4300	4500	4900	3400	2000	3600
	5300	5000	3500	3500	3200	2600	3600	3300	2000*	1000	4300	4500	4900	3400	2100	3600
	6000	5700	4100	4100	3900	3300	4300	3900	2600*	1200	4500	4700	5000	3600	2300	3800
	6700	6400	4800	4800	4600	4000	4900	4600	3300*	1200	4700	4900	5200	3900	2500	4100
10 KT [9-80]	6300	7600	5000	4800	4500	3700	4500	4000	1900*	1200	6200	7300	7700	6500	3000	5900
	6700	8100	5400	5300	5000	4100	5000	4500	2300*	1400	6200	7300	7700	6500	3000	5900
	9400	8800	6100	6000	5700	4800	5700	5200	3000*	1600	6300	7300	7600	6500	3300	6000
	10100	9500	6800	6700	6400	5500	6400	5900	3700*	1800	6500	7600	7900	6800	3600	6200
100 KT [11-218]	22100	20500	12900	11400	10500	7900	8800	7800	3400	2800	12500	16900	16900	16900	6800	14500
	22600	20900	13300	11800	10900	8300	9200	8300	3800	2800	12500	16900	16900	16900	6800	14500
	23300	21600	14000	12500	11600	9000	9800	9000	4500	3100	12500	16900	16900	16900	6800	14500
	24000	22300	14700	13200	12300	9700	10600	9700	5200	3300	12500	16900	16900	16900	7100	14500

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

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CHAPTER 6
 COVERAGE AND SAFETY TABLES FOR
 LOW AIRBURST
 PERSONNEL IN TANKS

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SHORT RANGE CANNON .2 KT (3-10)

COVERAGE TABLE (Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE PERMANENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	150	200	225	275	300	350	425	525						
2000	.95/.97	.81/.85	.70/.72	.50/.52	.41/.43	.30/.32	.20/.22	.10/.12	194	195	25	12	90	5
3000	.91/.96	.80/.84	.70/.72	.50/.52	.41/.44	.30/.32	.20/.22	.10/.12	193	195	38	19	90	8
4000	.91/.95	.78/.82	.70/.72	.50/.52	.41/.44	.30/.32	.20/.22	.10/.12	193	195	51	25	90	10
5000	.90/.93	.76/.81	.67/.71	.50/.52	.41/.44	.30/.32	.20/.22	.10/.12	191	194	64	32	90	13
6000	.87/.92	.72/.79	.65/.70	.49/.52	.41/.44	.30/.32	.20/.22	.10/.12	190	194	77	38	90	15
7000	.85/.91	.69/.76	.62/.69	.47/.51	.40/.44	.30/.32	.20/.22	.10/.12	189	193	90	45	90	18
8000	.80/.89	.66/.76	.59/.67	.46/.51	.40/.43	.30/.32	.20/.22	.10/.12	188	193	102	51	90	20
9000	.74/.87	.61/.73	.55/.65	.43/.49	.37/.42	.27/.31	.18/.22	.10/.12	183	190	116	58	99	23
10000	.68/.84	.56/.71	.51/.63	.41/.48	.35/.41	.26/.31	.17/.21	.10/.12	178	188	128	64	106	25

COVERAGE TABLE (Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE TRANSIENT
LOW AIRBURST

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
RANGE	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	200	250	300	375	425	475	575	850						
2000	.95/.97	.90/.92	.75/.77	.55/.57	.40/.42	.30/.32	.20/.22	.10/.12	274	274	25	12	90	5
3000	.95/.97	.90/.92	.75/.77	.55/.57	.40/.42	.30/.32	.20/.22	.10/.12	274	274	38	19	90	8
4000	.95/.97	.90/.92	.75/.77	.55/.57	.40/.42	.30/.32	.20/.22	.10/.12	273	274	51	25	90	10
5000	.92/.96	.87/.91	.75/.77	.55/.57	.40/.42	.30/.32	.20/.22	.10/.12	272	274	64	32	90	13
6000	.91/.96	.85/.90	.75/.77	.53/.57	.40/.42	.30/.32	.20/.22	.10/.12	271	273	77	38	90	15
7000	.91/.95	.82/.89	.71/.76	.52/.56	.40/.42	.30/.32	.20/.22	.10/.12	270	273	90	45	90	18
8000	.90/.94	.80/.86	.69/.75	.51/.55	.40/.42	.30/.32	.20/.22	.10/.12	269	272	102	51	90	20
9000	.87/.93	.77/.86	.66/.74	.50/.55	.40/.42	.30/.32	.20/.22	.10/.12	265	271	116	58	99	23
10000	.85/.92	.75/.84	.65/.72	.49/.54	.39/.42	.30/.32	.20/.22	.10/.12	261	269	128	64	106	25

COVERAGE TABLE (Distances in meters)

SHORT RANGE CANNON **.2 KT** **(3-10)**

PERSONNEL IN TANKS - LATENT LETHALITY **LOW AIRBURST**

EFFECTIVENESS									PROB	ACCURACY DATA				
RANGE	RADIUS OF TARGET								MIN	EXPT	CD/90	CEP	HOB	PEH
	200	375	450	575	650	750	950	1200	RD	RD				
2000	.95/.97	.90/.92	.75/.77	.51/.55	.40/.42	.30/.32	.20/.22	.10/.12	416	417	25	12	90	5
3000	.95/.97	.90/.92	.76/.78	.51/.55	.40/.42	.30/.32	.18/.22	.10/.12	415	417	38	19	90	8
4000	.95/.97	.90/.92	.76/.78	.51/.55	.40/.42	.30/.32	.18/.22	.10/.12	415	416	51	25	90	10
5000	.95/.97	.90/.92	.76/.78	.51/.55	.40/.42	.30/.32	.17/.21	.10/.12	414	416	64	32	90	13
6000	.95/.97	.90/.92	.76/.78	.51/.55	.40/.42	.30/.32	.17/.21	.10/.12	413	416	77	39	90	15
7000	.95/.97	.89/.92	.75/.78	.51/.55	.40/.42	.30/.32	.16/.21	.10/.12	411	415	90	45	90	18
8000	.95/.97	.87/.91	.75/.77	.51/.55	.40/.42	.30/.32	.16/.21	.10/.12	410	414	102	51	90	20
9000	.95/.97	.85/.91	.75/.77	.51/.55	.40/.42	.30/.32	.17/.21	.10/.12	411	415	116	59	99	23
10000	.95/.97	.84/.90	.73/.77	.51/.54	.40/.42	.30/.32	.16/.21	.10/.12	409	414	128	64	106	25

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO BLDG	LT ACFT OBSN UTIL HEL	IN FLIGHT OV-1B ASLT CARGO HEL		FOREST BLOWDOWN DEC/D CONIF		WILDLAND FIRES CLASS I IV	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	DEC/D	CONIF	I	IV
2000	1100	1000	800	900	900	800	800	700	600	200	1200	1300	1400	1100	500	300	800	400
3000	1100	1000	800	1000	900	800	900	800	600	200	1200	1300	1400	1100	500	300	800	400
4000	1200	1100	800	1000	900	800	900	800	700	200	1200	1300	1400	1100	500	300	800	400
5000	1200	1100	800	1000	900	800	900	800	700	200	1200	1300	1400	1100	500	300	800	400
6000	1200	1100	900	1000	1000	900	900	800	700	200	1200	1300	1400	1100	500	300	800	400
7000	1200	1100	900	1000	1000	900	1000	900	700	200	1200	1300	1400	1100	500	300	800	400
8000	1200	1100	900	1000	1000	900	1000	900	700	200	1200	1300	1400	1100	500	300	800	500
9000	1200	1100	900	1100	1000	900	1000	900	700	200	1300	1300	1400	1100	500	300	800	500
10000	1300	1200	900	1100	1000	900	1100	1000	800	200	1300	1300	1400	1100	500	300	800	500

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

SHORT RANGE CANNON 1 KT (5-24)

COVERAGE TABLE (Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE PERMANENT
LOW AIRBURST

EFFECTIVENESS									PROB	ACCURACY DATA				
RANGE	RADIUS OF TARGET								MIN	EXPT	CD/90	CEP	HOB	PEH
	300	350	400	525	575	650	800	1000	RD	RD				
2000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	37	370	25	12	90	5
3000	.91/.96	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	37	370	38	19	90	8
4000	.91/.95	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	36	370	51	25	90	10
5000	.91/.94	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	36	369	64	32	90	13
6000	.91/.93	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	36	369	77	38	90	15
7000	.90/.93	.84/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	36	369	90	45	94	18
8000	.90/.93	.82/.86	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	36	368	102	51	101	20
9000	.88/.92	.80/.85	.73/.76	.49/.52	.40/.42	.30/.32	.20/.22	.10/.12	36	367	116	58	112	23
10000	.87/.91	.78/.85	.71/.76	.47/.51	.40/.42	.30/.32	.20/.22	.10/.12	35	366	128	64	119	25

COVERAGE TABLE (Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	300	450	525	650	750	850	1000	1500						
2000	.95/.97	.85/.87	.75/.77	.55/.57	.40/.42	.30/.32	.20/.22	.10/.12	475	476	25	12	90	5
3000	.95/.97	.85/.87	.75/.77	.55/.57	.40/.42	.30/.32	.20/.22	.10/.12	474	475	38	19	90	8
4000	.95/.97	.85/.87	.75/.77	.55/.57	.40/.42	.30/.32	.20/.22	.10/.12	474	475	51	25	90	10
5000	.95/.97	.85/.87	.75/.77	.53/.57	.40/.42	.30/.32	.20/.22	.10/.12	472	475	64	32	90	13
6000	.95/.97	.85/.87	.75/.77	.53/.57	.40/.42	.30/.32	.20/.22	.10/.12	471	474	77	38	90	15
7000	.95/.97	.85/.87	.75/.77	.53/.57	.40/.42	.30/.32	.20/.22	.10/.12	471	474	90	45	94	18
8000	.95/.97	.85/.87	.75/.77	.53/.57	.40/.42	.30/.32	.20/.22	.10/.12	471	474	102	51	101	20
9000	.95/.97	.84/.87	.75/.77	.54/.57	.40/.42	.30/.32	.20/.22	.10/.12	471	474	116	58	112	23
10000	.95/.97	.82/.86	.74/.77	.53/.57	.40/.42	.30/.32	.20/.22	.10/.12	470	474	128	64	119	25

COVERAGE TABLE (Distances in meters)

SHORT RANGE CANNON **1 KT** **(5-24)**

PERSONNEL IN TANKS - LATENT LETHALITY **LOW AIR BURST**

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
RANGE	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	500	650	750	900	1050	1200	1400	1800						
2000	.95/.97	.85/.87	.70/.72	.47/.51	.40/.42	.30/.32	.20/.22	.10/.12	657	658	25	12	90	5
3000	.95/.97	.85/.87	.70/.72	.46/.51	.40/.42	.30/.32	.20/.22	.10/.12	656	658	38	14	90	4
4000	.95/.97	.85/.87	.70/.72	.46/.51	.40/.42	.30/.32	.20/.22	.10/.12	654	658	51	25	90	10
5000	.95/.97	.85/.87	.70/.72	.46/.51	.40/.42	.30/.32	.20/.22	.10/.12	652	657	64	32	90	13
6000	.95/.97	.85/.87	.70/.72	.46/.51	.40/.42	.30/.32	.20/.22	.10/.12	651	657	77	38	90	15
7000	.95/.97	.85/.87	.70/.72	.46/.51	.40/.42	.30/.32	.20/.22	.10/.12	651	657	90	45	94	14
8000	.94/.97	.85/.87	.70/.72	.47/.51	.40/.42	.30/.32	.20/.22	.10/.12	652	658	102	51	101	20
9000	.93/.96	.84/.87	.70/.72	.47/.51	.40/.42	.30/.32	.20/.22	.10/.12	651	659	116	58	112	23
10000	.92/.96	.83/.87	.70/.72	.48/.52	.40/.42	.30/.32	.20/.22	.10/.12	655	659	124	64	119	25

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO BLDG	LT ACFT OBSN UTIL	IN FLIGHT OV-10 ASLT	FOREST BLOWDOWN DECID CONIF	WILDLAND FIRES CLASS I	CLASS IV
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL		
2000	2500	2300	1400	1400	1300	1100	1400	1300	900	400	2000	2400	2700	1800	600	1800
3000	2500	2300	1400	1500	1300	1100	1500	1300	900	400	2000	2400	2700	1800	600	1800
4000	2500	2300	1400	1500	1400	1200	1500	1300	1000	400	2100	2400	2700	1800	600	1800
5000	2500	2400	1400	1500	1400	1200	1500	1400	1000	400	2100	2400	2700	1800	600	1800
6000	2600	2400	1400	1500	1400	1200	1500	1400	1000	400	2100	2400	2700	1800	600	1800
7000	2600	2400	1500	1500	1400	1200	1500	1400	1000	400	2100	2400	2700	1800	600	1800
8000	2600	2400	1500	1600	1400	1200	1600	1400	1000	400	2100	2400	2700	1800	600	1800
9000	2600	2400	1500	1600	1400	1200	1600	1500	1000	400	2100	2400	2700	1800	600	1800
10000	2600	2400	1500	1600	1500	1300	1700	1500	1100	400	2200	2400	2700	1800	700	1800

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

MEDIUM RANGE CANNON 2 KT (6-38)

COVERAGE TABLE (Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE PERMANENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	400	500	550	700	800	900	1100	1400						
2000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	504	504	25	12	120	5
3000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	504	504	38	19	120	8
4000	.94/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	504	504	51	25	120	10
5000	.92/.96	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	502	503	64	32	120	13
6000	.91/.95	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	501	503	77	38	120	15
7000	.91/.95	.82/.86	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	498	502	90	45	120	18
8000	.91/.94	.82/.86	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	497	502	102	51	120	20
9000	.91/.94	.81/.85	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	495	501	116	58	120	23
10000	.90/.93	.80/.85	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	491	500	129	64	120	25
11000	.90/.93	.78/.84	.72/.76	.50/.52	.37/.41	.30/.32	.20/.22	.10/.12	490	498	141	71	138	28
12000	.89/.92	.77/.83	.71/.76	.50/.52	.37/.41	.30/.32	.20/.22	.10/.12	485	496	154	77	145	30
13000	.87/.92	.76/.82	.68/.75	.48/.51	.36/.40	.28/.32	.18/.22	.10/.12	478	493	167	84	155	33
14000	.86/.91	.74/.81	.67/.74	.46/.51	.35/.40	.27/.31	.18/.22	.10/.12	473	490	180	90	162	35
15000	.84/.90	.71/.79	.65/.73	.45/.50	.33/.39	.26/.31	.17/.21	.10/.12	467	486	193	97	175	38
16000	.82/.89	.69/.78	.63/.72	.42/.49	.32/.39	.26/.30	.16/.20	.10/.12	457	483	205	103	180	40
17000	.79/.88	.66/.77	.60/.70	.41/.48	.30/.37	.25/.30	.16/.20	.10/.12	445	478	219	110	190	43
18000	.77/.87	.64/.75	.57/.69	.40/.48	.30/.37	.23/.29	.16/.20	.10/.12	432	474	231	116	190	45
19000	.73/.85	.60/.74	.55/.67	.36/.47	.27/.36	.22/.29	.15/.19	.08/.12	425	468	244	122	200	48
20000	.70/.84	.57/.72	.52/.65	.36/.45	.26/.35	.20/.28	.13/.19	.08/.12	415	463	257	128	215	50

COVERAGE TABLE (Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	500	600	700	900	1000	1200	1400	1800						
2000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	645	644	25	12	120	5
3000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	644	644	38	19	120	8
4000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.28/.32	.20/.22	.10/.12	643	644	51	25	120	10
5000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.27/.31	.20/.22	.10/.12	642	644	64	32	120	13
6000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.26/.31	.20/.22	.10/.12	641	643	77	38	120	15
7000	.93/.96	.85/.87	.75/.77	.50/.52	.40/.42	.26/.30	.20/.22	.10/.12	639	643	90	45	120	18
8000	.92/.96	.85/.87	.75/.77	.50/.52	.40/.42	.26/.30	.20/.22	.10/.12	634	642	102	51	120	20
9000	.91/.96	.85/.87	.75/.77	.50/.52	.40/.42	.26/.30	.20/.22	.10/.12	635	641	116	58	120	23
10000	.91/.95	.85/.87	.75/.77	.50/.52	.40/.42	.26/.30	.20/.22	.10/.12	637	641	129	64	120	25
11000	.91/.95	.85/.87	.75/.77	.50/.52	.40/.42	.26/.29	.20/.22	.10/.12	632	640	141	71	138	28
12000	.91/.94	.85/.87	.75/.77	.50/.52	.40/.42	.26/.29	.20/.22	.10/.12	623	639	154	77	145	30
13000	.91/.94	.83/.86	.74/.77	.50/.52	.40/.42	.26/.29	.20/.22	.10/.12	626	636	167	84	155	33
14000	.90/.94	.82/.86	.72/.76	.50/.52	.40/.42	.26/.28	.20/.22	.10/.12	624	635	180	90	162	35
15000	.90/.93	.81/.86	.71/.76	.48/.51	.38/.42	.26/.29	.20/.22	.10/.12	616	632	193	97	175	38
16000	.89/.93	.80/.85	.69/.75	.46/.51	.38/.42	.25/.28	.18/.22	.10/.12	611	630	205	103	180	40
17000	.87/.92	.78/.84	.68/.74	.46/.51	.36/.41	.25/.28	.13/.22	.10/.12	603	626	219	110	190	43
18000	.86/.92	.76/.84	.66/.74	.45/.50	.36/.41	.25/.28	.17/.21	.10/.12	597	623	231	116	190	45
19000	.85/.91	.75/.83	.65/.72	.42/.49	.35/.40	.23/.27	.17/.21	.10/.12	587	619	244	122	208	48
20000	.83/.90	.73/.92	.63/.72	.42/.49	.35/.40	.23/.27	.16/.20	.10/.12	581	615	257	128	215	50

COVERAGE TABLE (Distances in meters)

MEDIUM RANGE CANNON **2 KT** **(6-38)**

PERSONNEL IN TANKS - LATENT LETHALITY **LOW AIRBURST**

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	700	900	1000	1250	1400	1600	1900	2400						
2000	.95/.97	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	884	883	25	12	120	5
3000	.95/.97	.85/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	882	883	38	19	120	8
4000	.95/.97	.83/.87	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	881	882	51	25	120	10
5000	.95/.97	.82/.86	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	880	882	64	32	120	13
6000	.95/.97	.82/.86	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	879	882	77	38	120	15
7000	.94/.97	.82/.86	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	878	881	90	45	120	18
8000	.92/.96	.81/.85	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	875	881	102	51	120	20
9000	.92/.96	.81/.85	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	875	880	116	58	120	23
10000	.91/.96	.81/.85	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	876	880	128	64	127	25
11000	.91/.95	.81/.84	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	873	880	141	71	138	28
12000	.91/.95	.81/.85	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	874	880	154	77	145	30
13000	.91/.94	.81/.84	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	871	878	167	84	155	33
14000	.91/.94	.80/.83	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	869	877	180	90	162	35
15000	.91/.94	.80/.83	.70/.72	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	867	876	193	97	173	38
16000	.91/.94	.79/.83	.70/.72	.48/.52	.38/.42	.30/.32	.20/.22	.10/.12	861	874	205	103	180	40
17000	.90/.93	.78/.82	.70/.72	.48/.51	.38/.42	.30/.32	.20/.22	.10/.12	859	872	219	110	190	43
18000	.90/.93	.77/.82	.70/.72	.47/.51	.37/.41	.28/.32	.20/.22	.10/.12	855	870	231	116	197	45
19000	.90/.93	.76/.81	.68/.72	.47/.51	.37/.41	.27/.31	.20/.22	.10/.12	847	867	244	122	208	48
20000	.90/.93	.76/.81	.67/.71	.46/.50	.36/.40	.27/.31	.20/.22	.10/.12	843	865	257	128	215	50

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED BRG	LT DAM TO BLDG	LT ACFT OBSN UTIL HEL	IN FLIGHT			FOREST		WILDLAND FIRES	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER				OV-1B ASLT HEL	CARGO HEL	BLOWDOWN DECID	CONIF	CLASS I	CLASS IV	
2000	3900	3600	2300	2300	2100	1600	2100	1800	1200	600	2900	3700	4000	2700	1300	900	2900	1800	
3000	3900	3600	2300	2300	2100	1600	2100	1900	1200	600	3000	3700	4000	2700	1400	900	2900	1800	
4000	3900	3700	2300	2300	2200	1700	2100	1900	1200	600	3000	3700	4000	2700	1400	900	2900	1800	
5000	3900	3700	2300	2400	2200	1700	2200	1900	1300	600	3000	3700	4000	2700	1400	900	2900	1800	
6000	4000	3700	2300	2400	2200	1700	2200	2000	1300	600	3000	3700	4000	2700	1400	900	2900	1800	
7000	4000	3700	2400	2400	2200	1700	2200	2000	1300	600	3000	3700	4000	2700	1400	900	2900	1800	
8000	4000	3700	2400	2400	2200	1800	2300	2000	1300	600	3000	3700	4000	2700	1400	900	2900	1800	
9000	4000	3800	2400	2500	2300	1800	2300	2100	1400	600	3100	3700	4000	2700	1400	900	2900	1800	
10000	4000	3800	2400	2500	2300	1800	2400	2100	1400	600	3100	3700	4000	2700	1400	900	2900	1800	
11000	4100	3800	2400	2500	2300	1800	2400	2200	1400	600	3200	3700	4000	2700	1500	1000	2900	1800	
12000	4100	3800	2500	2500	2300	1800	2500	2200	1400	600	3200	3700	4000	2700	1500	1000	2900	1800	
13000	4100	3800	2500	2500	2400	1900	2600	2300	1400	600	3300	3700	4000	2700	1500	1000	2900	1800	
14000	4100	3900	2500	2600	2400	1900	2600	2300	1500	600	3400	3700	4000	2700	1500	1100	2900	1800	
15000	4100	3900	2500	2600	2400	1900	2700	2400	1500	700	3400	3700	4000	2700	1600	1100	2900	1800	
16000	4200	3900	2600	2600	2400	1900	2700	2400	1500	700	3500	3700	4000	2700	1600	1100	2900	1800	
17000	4200	3900	2600	2600	2400	1900	2800	2500	1500	700	3500	3700	4000	2700	1600	1100	2900	1800	
18000	4200	4000	2600	2600	2500	2000	2800	2500	1500	700	3600	3700	4000	2700	1600	1200	2900	1800	
19000	4200	4000	2600	2700	2500	2000	2900	2600	1600	700	3600	3700	4000	2700	1600	1200	2900	1800	
20000	4300	4000	2600	2700	2500	2000	2900	2600	1600	700	3700	3700	4000	2700	1600	1200	2900	1800	

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

MEDIUM RANGE CANNON 8 KT (9-74)

COVERAGE TABLE (Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE PERMANENT LOW AIRBURST

RANGE	EFFECTIVENESS								PROB	ACCURACY DATA				
	RADIUS OF TARGET								MIN	EXPT	CD/90	CEP	HOB	PEH
	600	725	825	1025	1150	1300	1600	2000	RD	RD				
2000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	742	743	25	12	150	5
3000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	741	742	30	10	150	8
4000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	740	742	51	25	150	10
5000	.92/.96	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	739	742	64	32	150	13
6000	.91/.96	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	739	741	77	39	150	15
7000	.91/.95	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	737	741	90	45	150	18
8000	.91/.95	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	736	740	102	51	150	20
9000	.91/.94	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	735	740	116	59	150	23
10000	.91/.94	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	732	739	129	64	150	25
11000	.91/.94	.83/.87	.73/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	729	737	141	71	160	28
12000	.91/.93	.82/.86	.72/.76	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	724	735	154	77	167	30
13000	.90/.93	.81/.86	.71/.75	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	718	732	167	84	177	33
14000	.90/.93	.80/.85	.71/.75	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	712	730	180	90	184	35
15000	.90/.92	.79/.84	.69/.74	.48/.52	.38/.42	.30/.32	.20/.22	.10/.12	703	726	193	97	195	38
16000	.89/.92	.77/.83	.68/.74	.46/.51	.37/.41	.28/.32	.18/.22	.10/.12	697	723	205	103	202	40
17000	.87/.92	.76/.83	.66/.73	.46/.51	.36/.41	.28/.32	.18/.22	.10/.12	687	718	210	110	212	43
18000	.86/.91	.76/.82	.66/.72	.45/.50	.35/.40	.27/.31	.17/.21	.10/.12	680	715	231	116	210	45
19000	.85/.90	.73/.81	.64/.71	.42/.50	.35/.40	.26/.31	.17/.21	.10/.12	669	709	244	122	230	48
20000	.83/.90	.71/.80	.61/.70	.42/.49	.32/.39	.26/.30	.16/.21	.10/.12	660	705	257	129	237	50

COVERAGE TABLE (Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE TRANSIENT LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	750	875	1000	1300	1450	1600	2100	2700						
2000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	925	925	25	12	150	5
3000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	924	925	30	10	150	8
4000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	924	924	51	25	150	10
5000	.94/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	922	924	64	32	150	13
6000	.92/.96	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	922	924	77	39	150	15
7000	.91/.96	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	920	923	90	45	150	18
8000	.91/.95	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.19/.22	.19/.12	919	923	102	51	150	20
9000	.91/.95	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.19/.22	.10/.12	918	922	116	59	150	23
10000	.91/.94	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.18/.22	.10/.12	916	921	129	64	150	25
11000	.91/.94	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.17/.21	.10/.12	911	920	141	71	160	28
12000	.91/.94	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.17/.21	.10/.12	909	919	154	77	167	30
13000	.91/.93	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.16/.20	.10/.12	907	917	167	84	177	33
14000	.91/.93	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.16/.20	.10/.12	903	915	180	90	184	35
15000	.90/.93	.85/.87	.75/.77	.48/.52	.38/.42	.30/.32	.16/.20	.10/.12	896	912	193	97	195	38
16000	.90/.93	.83/.87	.74/.77	.47/.51	.38/.42	.30/.32	.16/.20	.10/.12	891	910	205	103	202	40
17000	.90/.93	.82/.86	.72/.76	.47/.51	.37/.41	.30/.32	.16/.19	.10/.12	883	906	219	117	212	43
18000	.90/.92	.81/.86	.72/.76	.45/.50	.37/.41	.30/.32	.16/.19	.10/.12	877	904	231	116	219	45
19000	.90/.92	.80/.85	.71/.75	.45/.50	.36/.40	.30/.32	.16/.19	.10/.12	867	899	244	122	230	48
20000	.88/.92	.79/.85	.70/.75	.45/.50	.36/.40	.30/.32	.16/.19	.10/.12	861	895	257	129	237	50

COVERAGE TABLE (Distances in meters)

MEDIUM RANGE CANNON 8 KT (9-74)

PERSONNEL IN TANKS - LATENT LETHALITY LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	950	1200	1350	1750	1900	2250	2600	3200						
2000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1229	1228	25	12	150	5
3000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1228	1227	38	19	150	8
4000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1227	1227	51	25	150	10
5000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1226	1227	64	32	150	13
6000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1225	1227	77	38	150	15
7000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1224	1226	90	45	150	18
8000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1222	1226	102	51	150	20
9000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1220	1225	116	58	150	23
10000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1219	1224	128	64	150	25
11000	.95/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1219	1224	141	71	160	28
12000	.94/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1218	1223	154	77	167	30
13000	.93/.97	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1213	1222	167	84	177	33
14000	.92/.96	.85/.87	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.15/.17	1209	1221	180	90	184	35
15000	.92/.96	.85/.87	.75/.77	.48/.52	.40/.42	.30/.32	.20/.22	.13/.17	1207	1219	193	97	195	38
16000	.91/.96	.85/.87	.75/.77	.48/.52	.40/.42	.28/.32	.20/.22	.13/.17	1206	1218	205	103	202	40
17000	.91/.95	.83/.87	.75/.77	.47/.51	.40/.42	.28/.32	.20/.22	.12/.16	1199	1215	210	110	212	43
18000	.91/.95	.82/.86	.73/.77	.46/.50	.40/.42	.27/.31	.20/.22	.11/.16	1195	1213	231	116	219	45
19000	.91/.95	.82/.86	.73/.76	.46/.50	.40/.42	.26/.31	.20/.22	.11/.16	1188	1210	244	122	230	48
20000	.91/.95	.81/.86	.72/.76	.46/.50	.40/.42	.26/.31	.20/.22	.11/.16	1183	1207	257	128	237	50

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT	FOREST BLOWDOWN DECID CONIF	WILDLAND FIRES CLASS CLASS	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	I	IV
2000	7500	6900	4500	4400	4100	3200	3500	3100	1400	1200	5100	6900	7300	5900	5600	3700
3000	7500	6900	4500	4400	4100	3300	3600	3200	1700	1200	5200	6900	7300	5900	5600	3700
4000	7500	7000	4500	4400	4100	3300	3600	3200	1700	1200	5200	6900	7300	5900	5600	3700
5000	7600	7000	4600	4500	4200	3300	3700	3300	1700	1200	5200	6900	7300	5900	5600	3700
6000	7600	7000	4600	4500	4200	3300	3700	3300	1700	1200	5200	6900	7300	5900	5600	3700
7000	7600	7000	4600	4500	4200	3400	3800	3300	1800	1200	5300	6900	7300	5900	5600	3700
8000	7600	7100	4600	4500	4200	3400	3800	3400	1800	1200	5300	6900	7300	5900	5600	3700
9000	7700	7100	4700	4600	4300	3400	3800	3400	1800	1200	5300	6900	7300	5900	5600	3700
10000	7700	7100	4700	4600	4300	3400	3900	3500	1800	1200	5300	6900	7300	5900	5600	3700
11000	7700	7100	4700	4600	4300	3500	4000	3500	1900	1200	5400	6900	7300	5900	5600	3700
12000	7700	7200	4700	4600	4300	3500	4000	3600	1900	1200	5500	6900	7300	5900	5600	3700
13000	7800	7200	4800	4700	4400	3500	4100	3700	1900	1200	5500	6900	7300	5900	5600	3700
14000	7800	7200	4800	4700	4400	3500	4200	3700	1900	1200	5600	6900	7300	5900	5600	3700
15000	7800	7200	4800	4700	4400	3600	4300	3800	2000	1200	5700	6900	7300	5900	5600	3700
16000	7800	7300	4800	4700	4400	3600	4300	3900	2000	1200	5700	6900	7300	5900	5600	3700
17000	7900	7300	4900	4800	4500	3600	4400	3900	2000	1200	5800	6900	7300	5900	5600	3700
18000	7900	7300	4900	4800	4500	3600	4500	4000	2000	1200	5900	6900	7300	5900	5600	3700
19000	7900	7300	4900	4800	4500	3700	4500	4100	2100	1200	5900	6900	7300	5900	5600	3700
20000	7900	7400	4900	4800	4500	3700	4500	4100	2100	1200	6000	6900	7300	5900	5600	3700

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

FREE FLIGHT ROCKET

5 KT

TOF < 40 SEC

(8-59)

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE PERMANENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB	ACCURACY DATA				
	RADIUS OF TARGET								MIN	EXPT	CD/90	CEP	HOB	PEH
	400	500	600	850	950	1050	1300	1800	RD	RD				
5000	.95/.97	.90/.93	.81/.88	.56/.61	.45/.47	.30/.40	.25/.27	.10/.12	63A	647	204	108	140	25
7000	.92/.96	.80/.92	.77/.86	.55/.59	.45/.47	.36/.39	.23/.27	.10/.12	631	642	237	130	161	31
9000	.90/.95	.80/.90	.74/.83	.51/.57	.41/.46	.30/.38	.21/.26	.10/.12	612	634	266	147	185	38
10000	.88/.95	.81/.89	.72/.82	.48/.56	.41/.46	.30/.38	.21/.25	.10/.12	602	630	283	156	196	41
11000	.80/.94	.78/.88	.70/.80	.47/.55	.40/.45	.31/.37	.21/.25	.10/.12	591	624	295	162	205	44
12000	.64/.93	.76/.87	.67/.79	.45/.54	.37/.44	.30/.36	.20/.24	.10/.12	576	617	311	171	221	48
13000	.81/.92	.73/.86	.64/.77	.43/.52	.35/.43	.28/.35	.18/.23	.10/.12	563	610	325	179	231	51
14000	.78/.91	.70/.84	.61/.70	.40/.51	.32/.42	.27/.35	.18/.23	.08/.12	549	603	341	187	241	54
15000	.75/.89	.68/.83	.58/.74	.40/.50	.31/.41	.25/.34	.16/.22	.08/.12	535	596	355	194	252	57
16000	.71/.87	.62/.80	.54/.72	.35/.48	.30/.40	.22/.33	.15/.22	.07/.11	513	585	371	202	266	61
17000	.68/.86	.58/.79	.50/.70	.35/.47	.28/.38	.21/.31	.15/.21	.07/.11	496	577	385	209	276	64
18000	.62/.84	.54/.77	.47/.68	.30/.45	.26/.37	.21/.31	.12/.20	.06/.10	477	567	400	217	287	67
19000	.57/.82	.50/.74	.44/.66	.29/.44	.21/.36	.17/.30	.12/.20	.06/.10	457	557	414	223	297	70
20000	.50/.79	.44/.71	.37/.63	.25/.41	.20/.35	.16/.29	.10/.19	.05/.10	429	541	431	232	311	74
21000	.44/.76	.40/.69	.33/.61	.20/.40	.16/.33	.16/.28	.10/.19	.05/.10	405	529	445	239	322	77
22000	.38/.74	.35/.66	.28/.58	.20/.39	.16/.32	.11/.27	.07/.18	.03/.09	379	516	461	246	332	80
23000	.32/.71	.28/.64	.24/.56	.15/.37	.11/.31	.11/.26	.06/.17	.03/.09	351	503	475	253	343	83
24000	.24/.67	.19/.60	.17/.53	.11/.35	.11/.28	.09/.24	.05/.16	.02/.08	319	484	493	262	357	87
25000	.10/.64	.11/.57	.12/.50	.06/.33	.06/.27	.06/.24	.03/.15	.02/.08	262	466	507	269	371	91
26000	.05/.62	.08/.55	.10/.48	.06/.32	.06/.27	.06/.23	.03/.15	.02/.08	235	456	523	276	378	93
27000	.05/.59	.05/.53	.06/.46	.05/.31	.05/.26	.05/.22	.03/.14	.02/.08	190	440	538	283	388	96
28000	.04/.55	.04/.49	.03/.43	.03/.29	.03/.24	.03/.20	.02/.13	.01/.07	115	421	555	292	402	100
29000	.02/.52	.03/.47	.03/.41	.03/.28	.03/.23	.03/.20	.02/.13	.01/.07	32	405	569	298	413	103
30000	.02/.50	.02/.45	.03/.39	.03/.26	.02/.22	.02/.19	.02/.13	.01/.07	0	390	586	306	423	106
31000	.01/.47	.02/.42	.03/.37	.02/.25	.02/.21	.02/.18	.02/.12	.01/.07	0	377	600	313	434	109
32000	.01/.44	.01/.39	.02/.35	.02/.24	.02/.20	.02/.17	.01/.12	.01/.06	0	357	618	321	444	113
33000	.00/.41	.01/.37	.02/.33	.02/.23	.02/.19	.01/.16	.01/.11	.01/.06	0	341	632	328	458	116

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB	EXPT	ACCURACY DATA				
	RADIUS OF TARGET								MIN		RD	CD/90	CEP	HOB	PEH
	550	700	900	1100	1200	1400	1700	2400							
5000	.95/.97	.89/.92	.75/.77	.55/.57	.45/.47	.35/.37	.20/.22	.10/.12	812	816	204	108	140	25	
7000	.92/.96	.86/.91	.71/.76	.55/.57	.45/.47	.32/.36	.20/.22	.10/.12	802	814	237	130	161	31	
9000	.91/.96	.83/.90	.68/.75	.52/.56	.45/.47	.31/.35	.20/.22	.10/.12	792	808	266	147	185	38	
10000	.91/.95	.82/.89	.67/.74	.51/.56	.43/.47	.31/.35	.20/.22	.10/.12	784	804	283	156	196	41	
11000	.90/.95	.81/.88	.66/.73	.50/.55	.43/.46	.31/.35	.20/.22	.10/.12	776	800	295	162	206	44	
12000	.89/.94	.79/.88	.65/.72	.49/.54	.41/.46	.30/.34	.20/.22	.10/.12	763	794	311	171	220	48	
13000	.87/.94	.77/.87	.62/.71	.47/.53	.40/.45	.30/.34	.20/.22	.10/.12	753	789	325	179	231	51	
14000	.86/.93	.76/.86	.61/.70	.46/.53	.40/.45	.28/.33	.18/.22	.08/.12	742	784	341	187	241	54	
15000	.85/.92	.74/.85	.58/.69	.45/.52	.37/.44	.28/.32	.18/.22	.08/.12	731	778	355	194	252	57	
16000	.82/.91	.71/.83	.57/.68	.42/.50	.35/.43	.26/.32	.17/.21	.07/.11	714	770	371	202	266	61	
17000	.80/.90	.69/.82	.55/.66	.40/.50	.35/.43	.25/.31	.16/.21	.07/.11	701	763	385	209	276	64	
18000	.78/.90	.67/.81	.52/.65	.40/.49	.32/.41	.25/.31	.16/.20	.06/.11	687	756	400	217	287	67	
19000	.76/.88	.64/.80	.51/.64	.36/.48	.31/.41	.22/.30	.15/.20	.06/.11	672	749	414	223	297	70	
20000	.72/.87	.61/.78	.47/.62	.35/.46	.30/.40	.21/.29	.15/.20	.06/.11	651	736	431	232	311	74	
21000	.69/.85	.58/.76	.44/.61	.30/.45	.27/.38	.20/.29	.13/.19	.06/.10	634	728	445	239	322	77	
22000	.65/.84	.54/.75	.43/.59	.30/.44	.26/.38	.20/.29	.12/.19	.06/.10	616	719	461	246	332	80	
23000	.62/.82	.51/.73	.39/.58	.30/.44	.25/.37	.17/.28	.12/.19	.06/.10	597	709	475	253	343	83	
24000	.57/.80	.48/.71	.35/.56	.25/.41	.21/.36	.16/.26	.10/.17	.05/.09	570	695	493	262	357	87	
25000	.51/.78	.44/.68	.31/.54	.24/.41	.21/.35	.15/.26	.10/.17	.05/.09	541	680	507	269	371	91	
26000	.48/.77	.41/.67	.30/.53	.21/.39	.16/.34	.12/.25	.07/.17	.03/.09	525	672	523	276	378	93	
27000	.44/.75	.37/.65	.26/.51	.20/.37	.16/.32	.11/.24	.07/.16	.03/.09	500	660	538	283	388	96	
28000	.38/.72	.29/.62	.23/.49	.16/.37	.16/.32	.11/.23	.06/.16	.03/.09	464	642	555	292	402	100	
29000	.33/.70	.25/.60	.20/.47	.15/.36	.11/.31	.10/.23	.05/.15	.02/.07	435	629	569	298	413	103	
30000	.26/.67	.20/.58	.18/.46	.11/.35	.11/.29	.08/.22	.05/.14	.02/.07	404	614	586	306	423	106	
31000	.19/.65	.17/.56	.15/.44	.11/.33	.08/.28	.06/.21	.03/.14	.02/.07	369	600	600	313	434	109	
32000	.11/.62	.13/.54	.10/.42	.06/.31	.06/.27	.05/.21	.03/.14	.02/.07	318	580	618	321	448	113	
33000	.07/.60	.10/.52	.06/.40	.06/.30	.06/.27	.03/.19	.03/.14	.01/.07	274	564	632	328	458	116	

FREE FLIGHT ROCKET

5 KT

COVERAGE TABLE (Distances in meters)

TOF < 40 SEC

(8-59)

PERSONNEL IN TANKS - LATENT LETHALITY LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	800	1000	1100	1500	1700	1900	2400	3000						
5000	.95/.97	.90/.92	.82/.86	.55/.57	.40/.42	.31/.36	.20/.22	.10/.12	1095	1100	204	108	147	25
7000	.93/.96	.88/.91	.81/.85	.55/.57	.40/.42	.31/.35	.20/.22	.10/.12	1093	1099	237	130	161	31
9000	.92/.96	.85/.91	.79/.84	.55/.57	.40/.42	.31/.34	.20/.22	.10/.12	1080	1095	266	147	185	38
10000	.91/.96	.84/.90	.78/.83	.52/.56	.40/.42	.31/.35	.20/.22	.10/.12	1081	1093	283	156	196	41
11000	.91/.95	.83/.89	.77/.83	.52/.56	.40/.42	.31/.34	.20/.22	.10/.12	1074	1090	295	162	206	44
12000	.91/.95	.82/.89	.76/.82	.51/.55	.40/.42	.31/.34	.20/.22	.10/.12	1065	1086	311	171	220	48
13000	.91/.95	.81/.88	.76/.82	.50/.54	.40/.42	.30/.33	.20/.22	.10/.12	1053	1082	325	179	231	51
14000	.90/.94	.80/.87	.75/.81	.50/.54	.38/.42	.30/.33	.18/.22	.10/.12	1050	1076	341	187	241	54
15000	.90/.94	.80/.87	.74/.81	.50/.54	.38/.42	.30/.33	.18/.22	.10/.12	1041	1074	355	194	252	57
16000	.89/.93	.78/.86	.73/.80	.47/.53	.37/.41	.30/.33	.17/.21	.10/.12	1029	1068	371	202	266	61
17000	.88/.93	.77/.85	.71/.79	.46/.52	.36/.41	.28/.32	.17/.21	.10/.12	1010	1064	385	209	276	64
18000	.87/.93	.76/.85	.70/.79	.46/.52	.35/.40	.28/.32	.16/.21	.10/.12	1007	1059	400	217	287	67
19000	.86/.92	.75/.84	.69/.78	.45/.51	.35/.40	.28/.32	.16/.21	.10/.12	997	1053	414	223	297	70
20000	.84/.91	.73/.83	.67/.77	.45/.51	.35/.40	.26/.31	.16/.20	.10/.12	984	1043	431	232	311	74
21000	.83/.91	.72/.82	.66/.76	.42/.50	.32/.39	.26/.31	.16/.20	.10/.12	973	1037	445	239	322	77
22000	.81/.90	.70/.81	.65/.75	.40/.50	.32/.39	.25/.30	.16/.20	.10/.12	950	1031	461	246	332	80
23000	.80/.89	.68/.80	.63/.74	.40/.48	.30/.38	.25/.30	.15/.19	.10/.12	946	1024	475	253	343	83
24000	.78/.89	.66/.79	.61/.73	.37/.48	.30/.37	.25/.30	.15/.19	.08/.12	928	1015	493	262	357	87
25000	.76/.88	.65/.78	.58/.72	.36/.47	.27/.36	.22/.29	.15/.18	.08/.12	908	1005	507	269	371	91
26000	.74/.87	.62/.77	.57/.71	.35/.46	.27/.36	.22/.29	.15/.18	.08/.12	894	1000	523	276	378	93
27000	.72/.86	.61/.76	.55/.70	.35/.46	.26/.36	.20/.28	.15/.18	.07/.11	883	992	538	283	388	96
28000	.69/.85	.58/.74	.53/.69	.31/.44	.25/.35	.20/.28	.12/.18	.07/.11	860	980	555	292	402	100
29000	.67/.84	.56/.73	.51/.67	.31/.44	.25/.34	.20/.28	.11/.17	.07/.11	843	971	569	298	413	103
30000	.65/.83	.54/.72	.48/.66	.30/.44	.22/.34	.17/.27	.11/.17	.07/.11	825	962	586	306	423	106
31000	.62/.81	.51/.71	.47/.65	.30/.42	.21/.33	.17/.27	.10/.17	.06/.10	805	952	600	313	434	109
32000	.58/.80	.49/.69	.43/.64	.26/.41	.21/.33	.16/.26	.10/.16	.06/.10	778	938	618	321	448	113
33000	.55/.78	.46/.68	.40/.62	.25/.41	.20/.32	.15/.26	.10/.16	.06/.10	757	927	632	328	453	116

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED BRG	LT DAM TO BLDG	LT ACFT IN FLIGHT		OV-10		FOREST		WILDLAND FIRES	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER			UTIL	ASLT	CARGO	BLOWDOWN	DECID	CONIF	CLASS I	CLASS IV
5000	0300	0800	3900	0900	3700	2900	3400	3100	1800	1000	4500	5600	6000	4500	2200	1500	4500	2900	
7000	0300	0900	4000	0900	3700	2900	3500	3200	1800	1000	4600	5600	6000	4500	2200	1600	4500	2900	
9000	0300	0900	4000	0900	3700	3000	3700	3300	1800	1000	4700	5600	6000	4500	2300	1600	4500	2900	
10000	0400	0900	4000	0900	3700	3000	3800	3400	1900	1000	4800	5600	6000	4500	2300	1700	4500	2900	
11000	0400	0900	4000	0900	3700	3000	3800	3500	1900	1000	4900	5600	6000	4500	2300	1700	4500	2900	
12000	0400	0900	4100	0900	3800	3000	4000	3500	1900	1000	5100	5600	6000	4500	2400	1800	4500	2900	
13000	0400	0900	4100	0900	3800	3100	4000	3600	2000	1100	5100	5600	6000	4500	2400	1800	4500	2900	
14000	0500	0900	4100	0900	3800	3100	4100	3700	2000	1100	5200	5600	6000	4500	2500	1900	4500	2900	
15000	0500	0900	4200	0900	3900	3100	4200	3800	2000	1100	5300	5600	6000	4500	2500	1900	4500	2900	
16000	0500	0900	4200	0900	3900	3200	4300	3800	2000	1100	5400	5600	6000	4500	2500	1900	4500	2900	
17000	0500	0900	4200	0900	3900	3200	4400	3900	2100	1200	5400	5600	6000	4500	2600	2000	4500	2900	
18000	0600	0900	4300	0900	4000	3200	4400	4000	2100	1200	5500	5600	6000	4500	2600	2000	4500	2900	
19000	0600	0900	4300	0900	4000	3200	4500	4100	2100	1200	5600	5600	6000	4500	2600	2000	4500	2900	
20000	0600	0900	4300	0900	4000	3300	4600	4100	2200	1200	5700	5600	6000	4500	2700	2000	4500	2900	
21000	0700	0900	4300	0900	4100	3300	4700	4200	2200	1200	5700	5600	6000	4500	2700	2000	4500	2900	
22000	0700	0900	4400	0900	4100	3300	4700	4300	2200	1200	5800	5600	6000	4500	2700	2000	4500	3000	
23000	0800	0900	4400	0900	4100	3400	4800	4300	2300	1200	5800	5600	6000	4500	2800	2000	4500	3000	
24000	0800	0900	4400	0900	4100	3400	4900	4400	2300	1200	5900	5600	6000	4500	2800	2000	4500	3000	
25000	0800	0900	4500	0900	4200	3400	5000	4400	2300	1200	6000	5600	6000	4500	2900	2000	4500	3000	
26000	0800	0900	4500	0900	4200	3500	5000	4500	2400	1300	6000	5600	6000	4500	2900	2000	4500	3000	
27000	0900	0900	4500	0900	4200	3500	5100	4500	2400	1300	6100	5600	6000	4500	2900	2100	4500	3000	
28000	0900	0900	4600	0900	4300	3500	5100	4600	2400	1300	6200	5600	6000	4500	2900	2100	4500	3000	
29000	0900	0900	4600	0900	4300	3600	5200	4700	2400	1300	6200	5600	6000	4500	2900	2100	4500	3000	
30000	0900	0900	4600	0900	4300	3600	5300	4700	2500	1300	6300	5600	6000	4500	2900	2100	4500	3000	
31000	0900	0900	4700	0900	4400	3700	5400	4800	2500	1300	6300	5600	6000	4500	2900	2100	4500	3000	
32000	0900	0900	4700	0900	4400	3700	5400	4800	2500	1300	6300	5600	6000	4500	2900	2100	4500	3000	
33000	0900	0900	4700	0900	4400	3700	5400	4800	2600	1300	6400	5600	6000	4500	2900	2100	4500	3000	

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

FREE FLIGHT ROCKET 5 KT

TOF > 40 SEC
(8-59)

COVERAGE TABLE (Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE PERMANENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	90% VERTICAL BRACKET	
	50	75	100	700	850	1000	1300	1800						
22000	.78/.92	.77/.91	.75/.91	.34/.55	.26/.42	.21/.32	.11/.19	.05/.10	445	550	461	246	135	432
24000	.72/.91	.71/.90	.70/.90	.35/.55	.27/.43	.21/.33	.11/.20	.05/.10	440	556	493	262	135	425
26000	.67/.90	.66/.89	.65/.89	.35/.55	.27/.43	.22/.33	.12/.20	.06/.10	440	562	523	276	135	417
28000	.60/.88	.59/.88	.58/.88	.34/.55	.28/.43	.22/.33	.12/.20	.06/.11	481	566	555	292	135	410
30000	.53/.87	.52/.87	.52/.86	.33/.55	.28/.43	.22/.34	.13/.21	.06/.11	481	571	586	306	135	402
32000	.44/.85	.44/.85	.44/.84	.32/.54	.27/.43	.22/.34	.13/.21	.06/.11	481	573	618	321	135	395
34000	.36/.84	.37/.83	.37/.83	.31/.53	.27/.43	.22/.34	.14/.21	.06/.11	481	576	649	336	135	386
36000	.29/.82	.30/.81	.32/.81	.30/.52	.26/.43	.22/.34	.14/.21	.06/.11	481	578	680	350	135	380
38000	.22/.80	.23/.79	.24/.79	.29/.52	.26/.42	.22/.34	.15/.21	.06/.11	481	580	712	366	135	371
40000	.16/.78	.16/.77	.17/.77	.27/.51	.25/.42	.22/.33	.15/.21	.06/.11	516	582	743	380	135	364
42000	.12/.76	.12/.75	.13/.75	.25/.50	.24/.41	.21/.33	.15/.21	.07/.11	516	583	775	396	135	356
44000	.08/.73	.08/.73	.09/.73	.24/.49	.23/.41	.21/.33	.15/.21	.07/.11	516	584	806	410	135	349
46000	.05/.71	.05/.71	.06/.71	.22/.48	.22/.40	.21/.33	.15/.21	.07/.11	516	586	839	426	135	341
48000	.04/.69	.04/.69	.04/.68	.20/.47	.21/.39	.20/.32	.15/.21	.07/.11	516	587	870	440	135	334
50000	.03/.67	.03/.67	.04/.66	.19/.46	.20/.39	.19/.32	.15/.21	.07/.11	516	588	902	455	135	325
52000	.02/.65	.03/.64	.03/.64	.17/.45	.18/.38	.18/.31	.15/.21	.07/.11	516	588	934	470	135	325
54000	.02/.63	.02/.62	.02/.62	.15/.44	.17/.37	.17/.31	.14/.21	.07/.11	516	589	966	485	135	325
56000	.01/.60	.01/.60	.02/.60	.14/.43	.16/.37	.16/.31	.14/.21	.07/.11	516	590	998	500	135	325
58000	.01/.60	.01/.59	.02/.59	.13/.42	.15/.36	.16/.31	.14/.21	.07/.11	516	591	1010	508	135	325
60000	.01/.58	.01/.58	.01/.58	.13/.42	.15/.36	.16/.30	.14/.21	.07/.11	516	592	1031	519	135	325

COVERAGE TABLE (Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	90% VERTICAL BRACKET	
	100	400	550	1000	1200	1400	1700	2400						
22000	.95/.97	.83/.93	.72/.87	.43/.55	.31/.40	.23/.30	.15/.20	.06/.11	663	745	461	246	135	432
24000	.95/.97	.81/.92	.71/.87	.43/.55	.31/.40	.24/.30	.15/.20	.06/.11	660	749	493	262	135	425
26000	.94/.97	.79/.92	.69/.86	.43/.55	.32/.41	.25/.31	.16/.20	.06/.11	660	754	523	276	135	417
28000	.92/.96	.76/.91	.66/.85	.43/.55	.32/.41	.25/.31	.16/.20	.06/.11	690	757	555	292	135	410
30000	.90/.95	.74/.90	.64/.84	.42/.55	.32/.41	.25/.31	.16/.21	.07/.11	690	760	586	306	135	402
32000	.87/.94	.71/.89	.62/.83	.42/.54	.32/.41	.25/.31	.16/.21	.07/.11	690	762	618	321	135	395
34000	.84/.93	.68/.88	.59/.82	.41/.54	.32/.41	.25/.31	.16/.21	.07/.11	690	764	649	336	135	386
36000	.80/.92	.64/.87	.57/.81	.40/.53	.32/.41	.25/.31	.16/.21	.07/.11	690	766	680	350	135	380
38000	.74/.91	.60/.85	.54/.79	.39/.53	.32/.41	.25/.31	.16/.21	.07/.11	690	767	712	366	135	371
40000	.69/.90	.57/.84	.51/.78	.38/.52	.31/.41	.25/.31	.16/.21	.07/.11	716	768	743	380	135	364
42000	.63/.89	.53/.83	.48/.77	.37/.52	.31/.41	.25/.31	.17/.21	.07/.11	716	769	775	396	135	356
44000	.56/.87	.49/.81	.45/.75	.35/.51	.31/.40	.25/.31	.17/.21	.07/.11	716	770	806	410	135	349
46000	.49/.86	.45/.80	.42/.74	.34/.50	.30/.40	.25/.31	.17/.21	.07/.11	716	771	839	426	135	341
48000	.42/.84	.41/.78	.39/.72	.33/.50	.29/.40	.25/.31	.17/.21	.07/.11	716	771	870	440	135	334
50000	.36/.82	.37/.77	.36/.71	.32/.49	.28/.39	.24/.31	.17/.21	.07/.11	716	772	902	455	135	325
52000	.30/.81	.33/.75	.34/.69	.31/.48	.27/.39	.24/.31	.17/.21	.07/.11	716	772	934	470	135	325
54000	.23/.79	.29/.73	.31/.68	.30/.48	.27/.39	.23/.31	.17/.21	.08/.12	716	773	966	485	135	325
56000	.18/.77	.26/.72	.28/.66	.28/.47	.26/.38	.23/.30	.17/.21	.08/.12	716	773	998	500	135	325
58000	.16/.76	.25/.71	.27/.66	.28/.47	.26/.38	.23/.30	.17/.21	.08/.12	716	774	1010	508	135	325
60000	.14/.75	.23/.70	.26/.65	.27/.46	.25/.38	.22/.30	.17/.21	.08/.12	716	775	1031	519	135	325

FREE FLIGHT ROCKET 5 KT

COVERAGE TABLE (Distances in meters)

TOF > 40 SEC
(8-59)

PERSONNEL IN TANKS - LATENT LETHALITY LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	90% VERTICAL	
	500	800	1000	1500	1700	1900	2400	3000					BRACKET	
22000	.95/.97	.85/.92	.73/.83	.45/.51	.35/.40	.27/.32	.16/.21	.10/.12	992	1052	461	246	135	432
24000	.95/.97	.83/.91	.72/.83	.45/.51	.35/.40	.27/.32	.16/.21	.10/.12	990	1055	493	262	135	425
26000	.94/.97	.82/.91	.71/.82	.45/.51	.36/.40	.27/.32	.16/.21	.10/.12	990	1058	523	276	135	417
28000	.93/.96	.81/.90	.70/.82	.45/.51	.36/.40	.28/.32	.15/.21	.10/.12	1011	1061	555	292	135	410
30000	.92/.96	.79/.90	.69/.81	.45/.51	.36/.41	.28/.32	.17/.21	.10/.12	1011	1063	586	306	135	402
32000	.91/.96	.78/.89	.68/.80	.45/.51	.36/.41	.29/.32	.17/.21	.10/.12	1011	1064	618	321	135	395
34000	.90/.95	.76/.88	.66/.80	.45/.51	.36/.41	.29/.33	.17/.21	.10/.12	1011	1066	649	336	135	386
36000	.88/.95	.75/.87	.65/.79	.45/.51	.36/.41	.29/.33	.17/.21	.10/.12	1011	1067	680	350	135	380
38000	.86/.94	.73/.87	.63/.78	.44/.51	.36/.41	.30/.33	.17/.21	.10/.12	1011	1068	712	366	135	371
40000	.85/.94	.71/.86	.62/.77	.43/.51	.36/.41	.30/.33	.17/.21	.10/.12	1031	1068	744	380	135	364
42000	.82/.93	.69/.85	.60/.77	.43/.50	.36/.41	.30/.33	.17/.21	.10/.12	1031	1069	775	396	135	356
44000	.80/.92	.67/.84	.59/.76	.42/.50	.36/.41	.30/.33	.17/.21	.10/.12	1031	1070	806	410	135	349
46000	.78/.91	.65/.83	.57/.75	.42/.50	.36/.40	.30/.33	.17/.21	.10/.12	1031	1070	839	426	135	341
48000	.75/.91	.62/.82	.56/.74	.41/.49	.35/.40	.30/.33	.17/.21	.10/.12	1031	1070	870	440	135	334
50000	.72/.90	.60/.81	.54/.73	.41/.49	.35/.40	.30/.33	.17/.21	.10/.12	1031	1071	902	455	135	325
52000	.69/.89	.58/.80	.52/.72	.40/.49	.35/.40	.29/.33	.17/.21	.10/.12	1031	1071	934	470	135	325
54000	.67/.88	.56/.79	.50/.71	.40/.48	.34/.40	.29/.33	.17/.21	.10/.12	1031	1071	966	485	135	325
56000	.64/.87	.54/.78	.49/.70	.39/.48	.34/.40	.29/.33	.17/.21	.10/.12	1031	1072	998	500	135	325
58000	.62/.86	.53/.78	.48/.70	.39/.48	.33/.40	.29/.33	.17/.21	.10/.12	1031	1072	1010	508	135	325
60000	.60/.86	.52/.77	.47/.69	.38/.48	.33/.40	.29/.33	.17/.21	.10/.12	1031	1073	1031	519	135	325

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO BLDG	LT ACFT OBSN UTIL HEL	IN FLIGHT OV-1B ASLT CARGO HEL	FOREST BLOWDOWN DECID CONIF	WILDLAND FIRES CLASS CLASS I IV			
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL				
22000	6700	6300	4400	4300	4100	3300	4600	4200	2200	1200	5600	5600	6000	4500	2700	2000	4500	3000
24000	6600	6300	4400	4400	4200	3400	4600	4200	2300	1200	5500	5600	6000	4500	2700	2000	4500	3000
26000	6600	6400	4500	4500	4200	3500	4700	4200	2400	1300	5500	5600	6000	4500	2700	2000	4500	3000
28000	6900	6500	4600	4500	4300	3500	4700	4300	2400	1300	5500	5600	6000	4500	2700	2100	4500	3000
30000	7000	6500	4600	4600	4300	3600	4800	4400	2500	1300	5500	5600	6000	4500	2700	2100	4500	3000
32000	7000	6600	4700	4700	4400	3700	4900	4400	2500	1300	5500	5600	6000	4500	2700	2100	4500	3000
34000	7100	6700	4800	4700	4500	3700	4900	4500	2600	1300	5500	5600	6000	4500	2700	2100	4600	3000
36000	7200	6700	4800	4800	4500	3800	5000	4500	2700	1300	5400	5600	6000	4500	2700	2100	4600	3100
38000	7200	6800	4900	4900	4600	3800	5100	4600	2700	1300	5500	5600	6000	4500	2700	2100	4600	3100
40000	7300	6800	4900	4900	4700	3900	5100	4700	2800	1400	5500	5600	5900	4500	2800	2200	4600	3100
42000	7400	6900	5000	5000	4700	4000	5200	4700	2900	1400	5500	5600	6000	4500	2800	2200	4600	3100
44000	7400	7000	5100	5000	4800	4000	5200	4800	2900	1400	5500	5600	6000	4600	2800	2200	4600	3100
46000	7500	7000	5100	5100	4800	4100	5300	4900	3000	1400	5500	5700	6000	4600	2800	2200	4700	3100
48000	7500	7100	5200	5200	4900	4200	5400	4900	3000	1400	5600	5700	6000	4600	2800	2200	4700	3200
50000	7600	7200	5300	5200	5000	4200	5400	5000	3100	1400	5600	5700	6100	4600	2800	2200	4700	3200
52000	7700	7200	5300	5300	5000	4300	5500	5000	3200	1400	5600	5700	6100	4600	2800	2300	4700	3200
54000	7700	7300	5400	5400	5100	4400	5600	5100	3200	1400	5600	5800	6100	4600	2800	2300	4700	3200
56000	7800	7400	5400	5400	5200	4400	5600	5200	3300	1500	5600	5800	6100	4700	2800	2300	4700	3200
58000	7800	7400	5500	5400	5200	4400	5600	5200	3300	1500	5600	5800	6100	4700	2800	2300	4800	3200
60000	7800	7400	5500	5500	5200	4500	5700	5200	3400	1500	5700	5800	6100	4700	2800	2300	4800	3200

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

FREE FLIGHT ROCKET

20 KT

TOF < 40 SEC

(9-105)

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE PERMANENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	450	600	750	1050	1150	1300	1600	2300						
5000	.95/.97	.90/.94	.80/.85	.52/.56	.45/.47	.35/.37	.20/.22	.10/.12	750	765	204	108	171	25
7000	.95/.97	.89/.93	.77/.83	.51/.55	.42/.46	.35/.37	.20/.22	.10/.12	749	760	237	130	192	31
9000	.94/.97	.86/.91	.75/.82	.49/.53	.41/.45	.31/.36	.20/.22	.10/.12	731	752	266	147	217	38
10000	.93/.96	.85/.91	.73/.81	.47/.53	.41/.45	.31/.35	.20/.22	.10/.12	723	748	283	156	227	41
11000	.92/.96	.83/.90	.71/.80	.46/.52	.40/.44	.31/.35	.20/.22	.10/.12	714	744	295	162	238	44
12000	.91/.96	.81/.89	.69/.79	.45/.51	.38/.43	.30/.34	.20/.22	.08/.12	702	737	311	171	252	48
13000	.90/.95	.79/.88	.67/.78	.45/.51	.36/.43	.28/.33	.18/.22	.07/.11	691	732	325	179	262	51
14000	.88/.94	.77/.87	.66/.76	.42/.50	.35/.42	.28/.33	.17/.21	.07/.11	680	727	341	187	273	54
15000	.86/.94	.75/.86	.63/.75	.40/.49	.35/.41	.26/.32	.17/.21	.06/.11	669	721	355	194	283	57
16000	.84/.93	.72/.85	.60/.73	.40/.48	.32/.41	.25/.31	.16/.20	.06/.11	653	712	371	202	297	61
17000	.81/.92	.70/.84	.58/.72	.37/.47	.30/.39	.25/.31	.16/.20	.06/.10	633	705	385	209	303	64
18000	.79/.91	.67/.83	.56/.71	.35/.46	.30/.39	.22/.30	.15/.20	.06/.10	626	698	400	217	318	67
19000	.76/.90	.64/.81	.53/.70	.35/.45	.27/.38	.22/.30	.15/.19	.06/.10	611	690	414	223	329	70
20000	.72/.88	.61/.79	.50/.67	.31/.43	.26/.37	.20/.29	.13/.19	.05/.09	590	679	431	232	343	74
21000	.68/.87	.57/.78	.48/.66	.30/.42	.25/.36	.20/.29	.12/.19	.05/.09	574	670	445	239	353	77
22000	.65/.85	.54/.76	.45/.64	.26/.41	.22/.35	.17/.27	.11/.18	.05/.09	556	661	461	246	364	80
23000	.61/.84	.51/.74	.42/.63	.26/.41	.21/.34	.16/.27	.10/.18	.05/.09	538	652	475	253	374	83
24000	.55/.81	.46/.72	.38/.60	.21/.39	.21/.33	.15/.26	.10/.18	.05/.08	512	638	493	262	389	87
25000	.49/.79	.42/.69	.34/.58	.21/.37	.16/.32	.12/.25	.07/.16	.03/.08	484	623	507	269	402	91
26000	.46/.77	.39/.68	.30/.57	.20/.37	.16/.32	.11/.25	.07/.16	.03/.08	469	616	523	276	409	93
27000	.40/.75	.35/.66	.26/.55	.16/.35	.16/.31	.11/.24	.07/.16	.03/.08	445	604	538	283	421	96
28000	.34/.72	.28/.63	.22/.53	.16/.33	.11/.28	.10/.23	.05/.15	.02/.07	411	587	555	292	434	100
29000	.29/.70	.24/.61	.20/.51	.11/.32	.11/.28	.06/.22	.05/.15	.02/.07	384	575	569	298	444	103
30000	.24/.68	.19/.59	.17/.49	.11/.32	.06/.27	.06/.22	.05/.15	.02/.07	355	561	586	306	455	106
31000	.17/.65	.15/.57	.15/.47	.06/.31	.06/.27	.06/.21	.03/.14	.01/.06	323	548	600	313	465	109
32000	.09/.62	.08/.54	.10/.45	.06/.29	.06/.24	.03/.19	.03/.13	.01/.06	277	528	618	321	479	113
33000	.05/.60	.06/.52	.07/.43	.06/.28	.03/.24	.03/.19	.03/.12	.01/.06	239	514	632	328	490	116

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	600	800	950	1250	1400	1600	2050	2900						
5000	.95/.97	.90/.92	.81/.85	.56/.58	.45/.47	.35/.37	.20/.22	.10/.12	940	945	204	108	171	25
7000	.95/.97	.89/.92	.78/.84	.56/.58	.45/.47	.35/.37	.20/.22	.10/.12	933	942	237	130	192	31
9000	.95/.97	.87/.91	.76/.82	.55/.57	.45/.47	.32/.36	.20/.22	.10/.12	919	936	266	147	217	38
10000	.94/.97	.86/.91	.76/.81	.55/.57	.43/.47	.32/.36	.20/.22	.10/.12	913	933	283	156	227	41
11000	.93/.97	.85/.90	.75/.81	.53/.57	.42/.46	.31/.36	.20/.22	.10/.12	905	929	295	162	238	44
12000	.92/.96	.83/.90	.74/.80	.51/.56	.41/.45	.31/.35	.18/.22	.08/.12	895	924	311	171	252	48
13000	.91/.96	.82/.89	.72/.79	.51/.56	.41/.45	.31/.35	.18/.22	.08/.12	886	919	325	179	262	51
14000	.91/.96	.81/.88	.71/.79	.50/.55	.40/.45	.31/.35	.17/.21	.07/.11	877	915	341	187	273	54
15000	.90/.95	.79/.88	.69/.78	.49/.55	.40/.44	.30/.34	.17/.21	.07/.11	869	910	355	194	283	57
16000	.87/.95	.77/.87	.67/.77	.47/.54	.37/.44	.28/.33	.16/.21	.06/.11	854	903	371	202	297	61
17000	.86/.94	.76/.86	.66/.76	.46/.53	.36/.43	.28/.33	.16/.21	.06/.11	844	897	385	209	308	64
18000	.86/.94	.75/.85	.65/.75	.45/.52	.35/.42	.26/.32	.16/.20	.06/.10	833	892	400	217	318	67
19000	.85/.93	.73/.84	.63/.74	.44/.52	.35/.42	.26/.32	.16/.20	.06/.10	821	885	414	223	329	70
20000	.83/.92	.70/.83	.61/.73	.40/.50	.32/.41	.25/.31	.15/.19	.06/.10	804	876	431	232	343	74
21000	.81/.91	.68/.82	.58/.72	.40/.50	.32/.41	.25/.31	.15/.19	.06/.09	791	869	445	239	353	77
22000	.79/.91	.66/.81	.57/.70	.40/.49	.30/.40	.22/.30	.15/.19	.06/.09	777	862	461	246	364	80
23000	.77/.90	.64/.79	.55/.69	.36/.48	.30/.39	.22/.30	.13/.18	.06/.09	763	854	475	253	374	83
24000	.74/.88	.61/.78	.52/.68	.35/.47	.27/.39	.20/.29	.13/.18	.06/.09	743	844	493	262	388	87
25000	.71/.87	.58/.76	.50/.66	.31/.45	.26/.37	.20/.29	.11/.17	.05/.08	721	833	507	269	402	91
26000	.69/.86	.56/.75	.47/.65	.31/.45	.26/.36	.20/.29	.11/.17	.05/.08	710	827	523	276	409	93
27000	.66/.85	.54/.74	.46/.64	.30/.45	.25/.36	.17/.28	.10/.17	.05/.08	693	818	538	283	421	96
28000	.62/.83	.50/.72	.43/.62	.26/.42	.21/.35	.16/.27	.10/.16	.05/.08	668	805	555	292	434	100
29000	.59/.82	.48/.71	.39/.61	.26/.42	.21/.34	.16/.26	.10/.16	.05/.08	649	795	569	298	444	103
30000	.55/.80	.45/.69	.38/.59	.25/.41	.21/.34	.15/.26	.08/.16	.03/.08	628	784	586	306	455	106
31000	.51/.79	.42/.67	.34/.58	.21/.40	.16/.33	.15/.26	.07/.16	.03/.07	607	773	600	313	465	109
32000	.46/.76	.37/.65	.30/.56	.20/.39	.16/.32	.11/.25	.07/.15	.03/.07	577	756	618	321	479	113
33000	.42/.75	.33/.63	.26/.55	.20/.37	.16/.32	.11/.24	.06/.14	.02/.07	552	744	632	328	490	116

FREE FLIGHT ROCKET

20 KT

COVERAGE TABLE (Distances in meters)

TOF < 40 SEC
(9-105)

PERSONNEL IN TANKS - LATENT LETHALITY LOW AIRBURST

RANGE	EFFECTIVENESS RADIUS OF TARGET								PROB MIN RD	EXPT RD	ACCURACY DATA			
	900	1150	1300	1700	1900	2200	2750	3300			CD/90	CEP	HOB	PEH
5000	.95/.97	.89/.92	.80/.82	.55/.57	.41/.43	.30/.32	.20/.22	.10/.12	1240	1242	204	104	171	25
7000	.95/.97	.86/.90	.80/.82	.55/.57	.41/.43	.30/.32	.20/.22	.10/.12	1233	1240	237	130	192	31
9000	.95/.96	.85/.90	.77/.81	.52/.56	.41/.43	.30/.32	.20/.22	.10/.12	1225	1236	266	147	217	39
10000	.92/.96	.85/.89	.77/.81	.51/.55	.41/.43	.30/.32	.20/.22	.10/.12	1220	1234	283	156	227	41
11000	.92/.96	.84/.89	.76/.81	.51/.55	.40/.43	.30/.32	.20/.22	.10/.12	1214	1231	295	162	234	44
12000	.91/.96	.83/.88	.76/.80	.51/.55	.40/.43	.30/.32	.20/.22	.10/.12	1206	1227	311	171	252	48
13000	.91/.95	.82/.87	.75/.80	.50/.54	.40/.43	.30/.32	.19/.22	.10/.12	1199	1224	325	179	262	51
14000	.91/.95	.81/.87	.75/.79	.50/.54	.40/.42	.30/.32	.17/.21	.10/.12	1192	1220	341	187	273	54
15000	.91/.95	.81/.86	.74/.79	.50/.54	.40/.42	.30/.32	.17/.21	.10/.12	1185	1217	355	194	283	57
16000	.90/.94	.80/.86	.72/.78	.48/.53	.38/.42	.28/.32	.16/.21	.10/.12	1174	1211	371	202	297	61
17000	.90/.94	.78/.85	.71/.78	.48/.53	.38/.42	.28/.32	.16/.21	.10/.12	1166	1207	385	209	304	64
18000	.90/.94	.77/.85	.70/.77	.47/.52	.37/.41	.27/.31	.16/.21	.10/.12	1158	1202	400	217	318	67
19000	.89/.93	.77/.84	.69/.76	.46/.52	.37/.41	.27/.31	.16/.20	.10/.12	1148	1197	414	223	329	70
20000	.88/.93	.76/.83	.67/.76	.45/.51	.36/.41	.26/.31	.15/.20	.10/.12	1136	1190	431	232	343	74
21000	.87/.93	.75/.83	.67/.75	.45/.51	.35/.40	.26/.30	.15/.20	.10/.12	1126	1185	445	239	353	77
22000	.86/.92	.74/.82	.66/.74	.45/.50	.35/.40	.26/.30	.15/.19	.10/.12	1116	1180	461	246	364	80
23000	.85/.92	.72/.82	.64/.74	.42/.50	.35/.40	.25/.29	.15/.19	.10/.12	1105	1174	475	253	374	83
24000	.85/.91	.71/.80	.63/.73	.42/.49	.32/.39	.25/.29	.15/.19	.10/.12	1090	1166	493	262	384	87
25000	.82/.90	.69/.80	.61/.72	.40/.48	.32/.39	.25/.29	.15/.19	.10/.12	1074	1158	507	269	402	91
26000	.81/.90	.68/.79	.60/.71	.40/.48	.31/.38	.25/.29	.15/.19	.10/.12	1066	1153	523	276	409	93
27000	.80/.89	.67/.78	.59/.70	.40/.48	.30/.38	.25/.28	.15/.18	.10/.12	1053	1147	538	283	420	96
28000	.78/.89	.65/.77	.57/.69	.37/.46	.30/.38	.21/.28	.15/.18	.10/.12	1035	1138	555	292	434	100
29000	.76/.88	.63/.77	.56/.69	.36/.46	.30/.37	.21/.28	.15/.18	.08/.12	1022	1130	569	298	444	103
30000	.75/.87	.62/.76	.55/.68	.36/.46	.27/.36	.20/.27	.15/.18	.08/.12	1007	1123	586	306	455	106
31000	.73/.86	.60/.75	.52/.67	.35/.45	.27/.36	.20/.27	.12/.17	.08/.12	992	1115	600	313	465	109
32000	.70/.85	.58/.73	.51/.65	.31/.44	.26/.36	.20/.26	.11/.17	.08/.12	972	1102	618	321	479	113
33000	.68/.84	.56/.72	.48/.64	.31/.43	.25/.35	.17/.26	.11/.17	.07/.11	956	1093	632	328	490	116

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

UNWARNED EXPOSED				WARNED EXPOSED			WARNED PROTECTED			MOD DAM	LT DAM	LT ACFT IN FLIGHT		OV-1B FOREST			WILDLAND FIRES	
RANGE	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	FIXED BRG	TO BLDG	UTIL HEL	ASLT HEL	CARGO HEL	BLOWDOWN DECID	CONIF	CLASS I	CLASS IV
5000	10900	10000	6200	5800	5400	4400	4800	4200	2000	1400	6500	9000	9300	8700	3300	2400	7100	4800
7000	10900	10000	6200	5900	5500	4400	4900	4400	2000	1500	6600	9000	9300	8700	3400	2500	7100	4800
9000	10900	10000	6200	5900	5500	4500	5100	4500	2100	1500	6800	9000	9300	8700	3500	2600	7100	4800
10000	10900	10000	6200	5900	5500	4500	5100	4600	2100	1500	6900	9000	9300	8700	3500	2600	7100	4800
11000	11000	10000	6300	5900	5500	4500	5200	4700	2100	1500	7000	9000	9300	8700	3500	2600	7100	4800
12000	11000	10100	6300	6000	5600	4600	5300	4800	2200	1500	7100	9000	9300	8700	3600	2700	7100	4800
13000	11000	10100	6300	6000	5600	4600	5400	4800	2200	1500	7200	9000	9300	8700	3600	2700	7100	4800
14000	11100	10100	6400	6000	5600	4600	5500	4900	2300	1500	7200	9000	9300	8700	3700	2700	7100	4800
15000	11100	10200	6400	6100	5700	4600	5600	5000	2300	1500	7300	9000	9300	8700	3700	2700	7100	4800
16000	11100	10200	6400	6100	5700	4700	5700	5100	2400	1500	7400	9000	9300	8700	3800	2800	7100	4800
17000	11100	10200	6400	6100	5700	4700	5700	5200	2400	1600	7500	9000	9300	8700	3800	2800	7100	4800
18000	11200	10300	6500	6200	5700	4700	5800	5200	2500	1600	7600	9000	9300	8700	3800	2900	7100	4800
19000	11200	10300	6500	6200	5800	4800	5900	5300	2500	1600	7600	9000	9300	8700	3900	2900	7100	4800
20000	11200	10300	6500	6200	5800	4800	6000	5400	2600	1600	7700	9000	9300	8700	3900	3000	7100	4800
21000	11300	10400	6600	6200	5800	4800	6100	5500	2600	1600	7800	9000	9300	8700	4000	3000	7100	4800
22000	11300	10400	6600	6300	5900	4900	6200	5500	2700	1700	7900	9000	9300	8700	4000	3000	7100	4800
23000	11300	10400	6600	6300	5900	4900	6300	5600	2700	1700	8000	9000	9300	8700	4000	3100	7100	4800
24000	11400	10400	6700	6300	5900	4900	6400	5700	2800	1700	8100	9000	9300	8700	4000	3100	7100	4800
25000	11400	10500	6700	6400	6000	5000	6500	5800	2800	1700	8200	9000	9300	8700	4100	3100	7100	4800
26000	11400	10500	6700	6400	6000	5000	6500	5800	2800	1800	8200	9000	9300	8700	4100	3200	7100	4800
27000	11500	10500	6700	6400	6000	5000	6600	5900	2900	1800	8300	9000	9300	8700	4100	3200	7100	4800
28000	11500	10600	6800	6500	6100	5100	6700	6000	2900	1800	8400	9000	9300	8700	4200	3200	7100	4800
29000	11500	10600	6800	6500	6100	5100	6700	6000	3000	1800	8400	9000	9300	8700	4200	3300	7100	4800
30000	11500	10600	6800	6500	6100	5100	6800	6100	3000	1900	8500	9000	9300	8700	4300	3300	7100	4800
31000	11600	10700	6900	6600	6200	5200	6900	6200	3100	1900	8600	9000	9300	8700	4300	3300	7100	4800
32000	11600	10700	6900	6600	6200	5200	7000	6300	3200	1900	8700	9000	9300	8700	4400	3400	7100	4800
33000	11600	10700	6900	6600	6200	5200	7000	6300	3200	1900	8700	9000	9300	8700	4500	3400	7100	4800

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

FREE FLIGHT ROCKET

20 KT

TOF > 40 SEC

(9-105)

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE PERMANENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	90% VERTICAL	
	100	300	450	900	1100	1300	1600	2300					BRACKET	
22000	.93/.96	.82/.93	.70/.88	.41/.55	.29/.39	.19/.28	.12/.19	.06/.09	568	675	461	246	165	482
24000	.91/.95	.80/.92	.68/.87	.41/.55	.29/.40	.20/.29	.13/.19	.06/.09	603	681	493	262	165	475
26000	.89/.95	.77/.91	.66/.86	.41/.55	.20/.41	.20/.29	.13/.19	.06/.09	603	687	523	276	165	467
28000	.86/.94	.74/.90	.63/.85	.40/.55	.20/.41	.21/.30	.14/.20	.06/.10	603	691	555	292	165	460
30000	.82/.93	.71/.89	.61/.84	.40/.55	.20/.41	.21/.30	.14/.20	.06/.10	603	695	586	306	165	452
32000	.78/.92	.67/.88	.58/.83	.39/.54	.20/.41	.21/.30	.15/.20	.06/.10	603	698	618	321	165	445
34000	.73/.91	.63/.87	.55/.82	.38/.54	.21/.41	.22/.30	.15/.20	.06/.10	620	700	649	336	165	436
36000	.67/.90	.59/.86	.52/.80	.37/.53	.20/.40	.22/.31	.15/.20	.06/.10	629	702	680	350	165	430
38000	.61/.88	.54/.84	.49/.79	.36/.53	.20/.40	.23/.31	.15/.20	.06/.10	629	705	712	366	165	421
40000	.54/.87	.49/.83	.45/.77	.35/.52	.20/.40	.23/.31	.15/.20	.06/.10	629	706	743	380	165	414
42000	.47/.85	.45/.81	.42/.76	.33/.51	.29/.40	.23/.31	.15/.20	.06/.11	629	708	775	396	165	406
44000	.40/.83	.39/.80	.39/.74	.32/.51	.28/.40	.22/.31	.15/.20	.06/.11	629	709	806	410	165	399
46000	.34/.82	.35/.78	.35/.73	.31/.50	.27/.39	.22/.30	.16/.20	.06/.11	656	710	839	426	165	391
48000	.27/.80	.30/.76	.32/.71	.30/.49	.27/.39	.22/.30	.16/.20	.06/.11	656	711	870	440	165	384
50000	.21/.78	.26/.74	.29/.70	.29/.48	.26/.39	.22/.30	.16/.20	.06/.11	656	712	902	455	165	375
52000	.16/.76	.22/.73	.26/.68	.27/.48	.25/.38	.21/.30	.16/.20	.06/.11	656	712	934	470	165	369
54000	.12/.74	.19/.71	.23/.66	.26/.47	.24/.38	.21/.30	.16/.20	.06/.11	656	713	966	485	165	365
56000	.09/.72	.16/.69	.20/.65	.25/.46	.23/.37	.21/.30	.16/.20	.06/.11	656	713	998	500	165	365
58000	.08/.71	.14/.68	.19/.64	.24/.46	.23/.37	.21/.30	.16/.20	.06/.11	656	715	1010	508	165	365
60000	.06/.70	.12/.67	.17/.63	.23/.45	.22/.37	.21/.29	.16/.20	.06/.11	656	716	1031	519	165	365

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	90% VERTICAL	
	300	600	750	1200	1400	1600	2050	2900					BRACKET	
22000	.95/.97	.82/.92	.72/.85	.44/.54	.24/.41	.26/.32	.15/.20	.06/.10	787	874	461	246	165	482
24000	.95/.97	.81/.91	.71/.85	.44/.54	.25/.41	.26/.32	.15/.20	.06/.10	814	879	493	262	165	475
26000	.94/.96	.79/.91	.70/.84	.44/.54	.25/.41	.26/.32	.16/.20	.06/.10	814	883	523	276	165	467
28000	.92/.96	.77/.90	.68/.83	.44/.54	.25/.42	.27/.33	.16/.20	.06/.10	814	886	555	292	165	460
30000	.91/.96	.76/.89	.67/.83	.44/.54	.25/.42	.27/.33	.16/.20	.06/.11	814	890	586	306	165	452
32000	.90/.95	.73/.88	.65/.82	.44/.54	.25/.42	.27/.33	.16/.20	.06/.11	814	892	618	321	165	445
34000	.87/.94	.71/.88	.63/.81	.43/.54	.26/.42	.27/.33	.16/.20	.06/.10	835	894	649	336	165	436
36000	.85/.94	.69/.87	.61/.80	.42/.53	.26/.42	.27/.33	.16/.20	.06/.11	835	896	680	350	165	430
38000	.82/.93	.66/.86	.60/.79	.42/.53	.25/.42	.27/.33	.16/.20	.06/.11	835	898	712	366	165	421
40000	.79/.92	.64/.85	.57/.78	.41/.53	.25/.42	.27/.33	.16/.20	.06/.11	835	899	743	380	165	414
42000	.76/.91	.61/.84	.56/.77	.41/.52	.25/.42	.27/.33	.16/.20	.06/.11	835	900	775	396	165	406
44000	.72/.90	.59/.82	.53/.76	.40/.52	.24/.42	.27/.33	.16/.21	.06/.11	835	901	806	410	165	399
46000	.68/.89	.56/.81	.51/.75	.39/.51	.24/.42	.27/.33	.16/.21	.06/.11	857	902	839	426	165	391
48000	.64/.88	.53/.80	.49/.74	.38/.51	.23/.41	.27/.33	.16/.21	.06/.11	857	903	870	440	165	384
50000	.60/.87	.51/.79	.47/.73	.37/.50	.22/.41	.27/.33	.16/.21	.06/.11	857	903	902	455	165	375
52000	.55/.85	.48/.77	.44/.71	.36/.50	.22/.41	.26/.33	.16/.21	.06/.11	857	904	934	470	165	369
54000	.51/.84	.45/.76	.42/.70	.35/.49	.21/.41	.26/.33	.16/.21	.07/.11	857	904	966	485	165	365
56000	.46/.83	.42/.75	.40/.69	.34/.49	.20/.40	.26/.32	.16/.21	.07/.11	857	905	998	500	165	365
58000	.44/.82	.41/.74	.40/.69	.34/.48	.20/.40	.26/.32	.16/.21	.07/.11	857	906	1010	508	165	365
60000	.41/.81	.39/.74	.38/.68	.33/.48	.20/.40	.26/.32	.16/.21	.07/.11	857	906	1031	519	165	365

FREE FLIGHT ROCKET

20 KT

TOF > 40 SEC

(9-105)

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN TANKS - LATENT LETHALITY LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	90% VERTICAL BRACKET	
	700	900	1100	1700	1900	2200	2750	3300						
22000	.94/.97	.87/.93	.77/.86	.46/.51	.36/.41	.26/.30	.16/.20	.10/.12	1123	1190	461	246	165	482
24000	.93/.97	.86/.92	.77/.86	.46/.51	.36/.41	.26/.31	.16/.20	.10/.12	1143	1193	493	262	165	475
26000	.92/.96	.86/.92	.76/.85	.46/.51	.36/.41	.26/.31	.16/.20	.10/.12	1143	1197	523	276	165	467
28000	.92/.96	.85/.92	.75/.85	.46/.52	.37/.41	.26/.31	.16/.20	.10/.12	1143	1199	555	292	165	460
30000	.91/.96	.83/.91	.74/.84	.46/.52	.37/.41	.27/.31	.16/.21	.10/.12	1143	1202	586	306	165	452
32000	.90/.95	.82/.91	.73/.84	.46/.52	.37/.42	.27/.31	.16/.21	.10/.12	1143	1204	618	321	165	445
34000	.89/.95	.81/.90	.72/.83	.46/.52	.38/.42	.27/.31	.17/.21	.10/.12	1160	1205	649	336	165	436
36000	.87/.95	.79/.90	.71/.83	.46/.52	.38/.42	.27/.31	.17/.21	.10/.12	1160	1207	680	350	165	430
38000	.86/.94	.78/.89	.69/.82	.45/.51	.38/.42	.28/.32	.17/.21	.10/.12	1160	1208	712	366	165	421
40000	.85/.94	.76/.89	.68/.81	.45/.51	.38/.41	.28/.32	.17/.21	.10/.12	1160	1209	743	380	165	414
42000	.83/.93	.75/.88	.66/.81	.45/.51	.38/.41	.28/.32	.17/.21	.10/.12	1160	1210	775	396	165	406
44000	.81/.92	.73/.87	.65/.80	.45/.51	.38/.41	.28/.32	.17/.21	.10/.12	1160	1210	806	410	165	399
46000	.80/.92	.71/.86	.63/.79	.44/.51	.38/.41	.28/.32	.17/.21	.10/.12	1176	1211	839	426	165	391
48000	.77/.91	.70/.85	.62/.78	.44/.51	.37/.41	.28/.32	.17/.21	.10/.12	1176	1212	870	440	165	384
50000	.76/.90	.68/.85	.61/.78	.43/.50	.37/.41	.28/.32	.17/.21	.10/.12	1176	1212	902	455	165	375
52000	.73/.90	.66/.84	.59/.77	.42/.50	.37/.41	.28/.32	.17/.21	.10/.12	1176	1213	934	470	165	369
54000	.71/.89	.64/.83	.57/.76	.42/.50	.36/.41	.28/.32	.17/.21	.10/.12	1176	1213	966	485	165	365
56000	.69/.88	.62/.82	.56/.75	.42/.49	.36/.41	.28/.32	.17/.21	.10/.12	1176	1213	998	500	165	365
58000	.68/.88	.61/.82	.55/.75	.41/.49	.36/.41	.28/.32	.18/.21	.10/.12	1176	1214	1010	508	165	365
60000	.67/.87	.60/.81	.54/.74	.41/.49	.36/.41	.28/.32	.18/.22	.10/.12	1176	1215	1031	514	165	365

SAFETY DISTANCE TABLE

(Distances in meters)

T R O O P S A F E T Y (M S D) ----- P R E C L U D E (L S D) -----

UNWARNED EXPOSED				WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT CARGO		FOREST BLOWDOWN DECID CONIF		WILDLAND FIRES CLASS I CLASS IV	
RANGE	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	HEL	HEL	HEL	
22000	11500	10400	6600	6300	5900	4900	6000	5400	2600	1600	7700	9000	9300	8700	3000	2900	7100 4800	
24000	11400	10400	6700	6300	5900	4900	6100	5500	2700	1600	7700	9000	9300	8700	3000	3000	7100 4800	
26000	11400	10500	6700	6400	6000	5000	6200	5500	2700	1700	7700	9000	9300	8700	3000	3000	7100 4800	
28000	11500	10600	6800	6500	6100	5000	6200	5600	2800	1700	7700	9000	9300	8700	3000	3000	7100 4800	
30000	11500	10600	6800	6500	6100	5100	6300	5700	2900	1700	7700	9000	9300	8700	3000	3000	7100 4800	
32000	11600	10700	6900	6600	6200	5200	6300	5700	2900	1700	7700	9000	9300	8700	3000	3000	7100 4800	
34000	11700	10800	7000	6600	6200	5200	6300	5700	3000	1700	7500	9000	9300	8700	3000	3000	7100 4800	
36000	11700	10800	7000	6700	6300	5300	6400	5800	3000	1700	7500	9000	9300	8700	3000	3000	7100 4800	
38000	11800	10900	7100	6800	6400	5300	6400	5800	3100	1700	7500	9000	9300	8700	3000	3000	7100 4800	
40000	11900	10900	7200	6800	6400	5400	6500	5900	3100	1700	7500	9000	9300	8700	3000	3000	7100 4800	
42000	11900	11000	7200	6900	6500	5500	6600	6000	3200	1800	7500	9000	9300	8700	3000	3000	7100 4800	
44000	12000	11100	7300	7000	6500	5500	6600	6000	3300	1800	7500	9000	9300	8700	4000	3100	7100 4900	
46000	12000	11100	7300	7000	6600	5600	6700	6100	3300	1800	7500	9000	9300	8700	4000	3100	7100 4900	
48000	12100	11200	7400	7100	6700	5700	6700	6100	3400	1800	7500	9000	9300	8700	4000	3100	7100 4900	
50000	12200	11200	7500	7100	6700	5700	6800	6200	3400	1800	7500	9000	9300	8700	4000	3100	7100 4900	
52000	12200	11300	7500	7200	6800	5800	6900	6300	3500	1800	7400	9000	9300	8700	4000	3100	7100 5000	
54000	12300	11400	7600	7300	6900	5800	6900	6300	3600	1900	7500	9000	9300	8700	4000	3200	7100 5000	
56000	12300	11400	7600	7300	6900	5900	7000	6400	3600	1900	7500	9000	9300	8700	4000	3200	7100 5000	
58000	12400	11500	7700	7300	6900	5900	7000	6400	3700	1900	7500	9000	9300	8700	4000	3200	7100 5000	
60000	12400	11500	7700	7400	7000	6000	7000	6400	3700	1900	7500	9000	9300	8700	4100	3200	7100 5000	

GUIDED MISSILE
10 KT
(9-80)

COVERAGE TABLE
 (Distances in meters)

P E R S O N N E L I N T A N K S - I M M E D I A T E P E R M A N E N T
 L O W A I R B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	350	600	750	1000	1200	1500	2100						
50-150 Km	.08/.71	.17/.67	.23/.58	.25/.52	.25/.41	.23/.32	.18/.22	.10/.12	661	700	911	500	242	50

COVERAGE TABLE
 (Distances in meters)

P E R S O N N E L I N T A N K S - I M M E D I A T E T R A N S I E N T
 L O W A I R B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	500	700	1100	1300	1600	1900	2800						
50-150 Km	.45/.85	.43/.78	.40/.70	.36/.52	.33/.43	.26/.31	.20/.22	.08/.12	859	893	911	500	242	50

GUIDED MISSILE
10 KT
(9-80)

COVERAGE TABLE
 (Distances in meters)

P E R S O N N E L I N T A N K S - L A T E N T L E T H A L I T Y
 L O W A I R B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	400	700	1600	1900	2200	2700	3500						
50-150 Km	.87/.95	.79/.92	.68/.87	.44/.53	.36/.41	.28/.31	.18/.22	.10/.12	1174	1202	911	500	242	50

SAFETY DISTANCE TABLE
 (Distances in meters)

T R O O P S A F E T Y (M S D) ----- P R E C L U D E (L S D) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT	CARGO HEL	BLowDOWN DECID	FOREST CONIF	WILDLAND FIRES CLASS	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL			I	IV
50-150 Km	9400	8800	6100	6000	5700	4800	5700	5200	3000	1600	6300	7300	7600	6500	3300	2500	4000	4200

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

GUIDED MISSILE

50 KT
(11-159)

COVERAGE TABLE
(Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE PERMANENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	600	800	1100	1300	1600	1900	2700						
50-150 Km	.39/.83	.38/.72	.37/.64	.34/.50	.31/.41	.25/.30	.18/.22	.08/.12	824	863	911	500	289	50

COVERAGE TABLE
(Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE TRANSIENT
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
50-150 Km	100	500	800	1400	1600	1900	2300	3200	1024	1060	911	500	289	50

GUIDED MISSILE

50 KT

(11-159)

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN TANKS - LATENT LETHALITY
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	400	700	1000	1900	2200	2500	3100	3800						
50-150 Km	.90/.95	.81/.92	.70/.86	.45/.52	.37/.41	.30/.32	.18/.22	.10/.12	1355	1381	911	500	289	50

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN	IN FLIGHT OV-1B	FOREST BLOWDOWN	WILDLAND FIRES
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	DECID CONIF
50-150 Km	17300	10000	10200	9300	6700	7000	7400	7000	3700	2400	9400	12700	12900	12700	5100

GUIDED MISSILE
100 KT
(11-218)

COVERAGE TABLE
 (Distances in meters)

P E R S O N N E L I N T A N K S - I M M E D I A T E P E R M A N E N T
 L O W A I R B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	400	700	1150	1400	1650	2100	2900						
50-150 Km	.49/.86	.46/.81	.42/.72	.36/.52	.31/.41	.25/.31	.16/.20	.06/.11	852	910	911	500	439	50

COVERAGE TABLE
 (Distances in meters)

P E R S O N N E L I N T A N K S - I M M E D I A T E T R A N S I E N T
 L O W A I R B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	500	700	1500	1800	2100	2600	3400						
50-150 Km	.82/.93	.70/.89	.62/.85	.42/.52	.34/.40	.26/.30	.15/.20	.10/.12	1082	1130	911	500	439	50

GUIDED MISSILE

100 KT

(11-218)

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN TANKS - LATENT LETHALITY

LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	500	800	1100	2100	2400	2700	3200	4400						
50-150 Km	.91/.96	.83/.93	.73/.87	.45/.50	.36/.40	.28/.32	.20/.22	.10/.12	1443	1485	911	500	439	50

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT	CARGO HEL	BLOWDOWN DECID	FOREST CONIF	WILDLAND FIRES CLASS	CLASS
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	HEL		I	IV
50-150 Km	23300	21600	14000	12500	11600	9000	9900	9000	4500	3100	12500	16900	16900	16900	6800	5400	14500	8900

MARK 50 BOMB

COVERAGE TABLE (Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE PERMANENT LOW AIRBURST

YIELD	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
3 KT [7-46]	300	450	550	750	850	1000	1200	1600						
	.95/.97	.82/.90	.70/.80	.42/.53	.32/.42	.25/.30	.16/.21	.08/.12	488	535	182	100	220	50
	.58/.84	.50/.74	.46/.66	.37/.48	.31/.40	.25/.29	.16/.21	.08/.12	488	535	455	250	220	50
	.03/.50	.05/.46	.08/.42	.13/.35	.14/.31	.15/.25	.14/.20	.08/.12	484	535	911	500	220	50
	.00/.29	.00/.28	.00/.26	.02/.23	.02/.22	.03/.19	.05/.16	.06/.11	488	535	1366	750	220	50
10 KT [9-80]	500	650	750	1000	1150	1350	1600	2100						
	.92/.96	.81/.89	.71/.79	.45/.52	.33/.39	.23/.28	.16/.21	.10/.12	661	704	182	100	242	50
	.71/.87	.61/.77	.55/.70	.42/.50	.33/.39	.23/.28	.16/.21	.10/.12	661	704	455	250	242	50
	.21/.62	.24/.56	.25/.52	.25/.41	.24/.34	.21/.27	.16/.20	.10/.12	661	704	911	500	242	50
	.02/.41	.03/.38	.04/.36	.08/.31	.10/.27	.12/.23	.12/.18	.09/.12	661	704	1366	750	242	50
100 KT [11-218]	600	850	1000	1300	1500	1700	2100	2700						
	.95/.97	.83/.89	.70/.77	.43/.51	.33/.40	.25/.30	.16/.20	.10/.12	852	914	182	100	439	50
	.84/.93	.70/.82	.61/.72	.42/.50	.33/.39	.25/.30	.16/.20	.10/.12	852	914	455	250	439	50
	.43/.75	.40/.65	.38/.59	.33/.45	.30/.37	.24/.29	.16/.20	.10/.12	852	914	911	500	439	50
	.09/.56	.14/.50	.17/.46	.19/.37	.20/.32	.19/.27	.15/.19	.10/.12	852	914	1366	750	439	50

COVERAGE TABLE (Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE TRANSIENT LOW AIRBURST

YIELD	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
3 KT [7-46]	400	650	750	1000	1100	1300	1600	2000						
	.95/.97	.82/.88	.72/.79	.45/.52	.37/.43	.25/.30	.16/.21	.10/.12	666	701	182	100	220	50
	.78/.91	.61/.77	.55/.69	.42/.49	.36/.42	.25/.30	.16/.21	.10/.12	666	701	455	250	220	50
	.18/.65	.24/.56	.25/.51	.25/.40	.24/.36	.21/.28	.16/.20	.10/.12	666	701	911	500	220	50
10 KT [9-80]	600	900	1000	1300	1450	1650	2050	2600						
	.95/.97	.80/.84	.71/.75	.45/.49	.36/.40	.27/.31	.16/.21	.10/.12	859	893	182	100	242	50
	.83/.92	.66/.77	.60/.70	.43/.49	.36/.40	.27/.31	.16/.21	.10/.12	859	893	455	250	242	50
	.41/.74	.38/.61	.37/.57	.33/.43	.30/.38	.25/.30	.16/.21	.10/.12	859	893	911	500	242	50
100 KT [11-218]	800	1100	1250	1600	1800	2100	2600	3200						
	.95/.97	.83/.87	.71/.77	.46/.52	.36/.42	.26/.31	.16/.20	.10/.13	1082	1134	182	100	439	50
	.88/.94	.73/.82	.66/.74	.46/.52	.36/.42	.26/.31	.16/.20	.10/.13	1082	1134	455	250	439	50
	.59/.81	.51/.70	.47/.63	.40/.48	.34/.40	.26/.30	.16/.20	.10/.13	1082	1134	911	500	439	50
	.27/.66	.29/.57	.29/.53	.28/.42	.26/.37	.23/.29	.16/.20	.10/.13	1082	1134	1366	750	439	50

MARK 50 BOMB

COVERAGE TABLE (Distances in meters)

PERSONNEL IN TANKS - LATENT LETHALITY LOW AIRBURST

YIELD	EFFECTIVENESS RADIUS OF TARGET								PROB MIN RD	EXPT RD	ACCURACY DATA			
	700	1000	1100	1400	1500	1800	2200	2700			CD/90	CEP	HOB	PEH
3 KT [7-46]	.95/.97	.80/.84	.71/.75	.47/.51	.41/.44	.27/.31	.17/.21	.10/.12	950	973	182	100	220	50
	.84/.92	.67/.77	.62/.71	.46/.50	.40/.44	.27/.31	.17/.21	.10/.12	950	973	455	250	220	50
	.48/.76	.43/.63	.41/.59	.36/.45	.34/.41	.26/.30	.17/.21	.10/.12	950	973	911	500	220	50
10 KT [9-80]	.15/.58	.20/.50	.21/.47	.22/.39	.22/.36	.21/.28	.16/.21	.10/.12	950	973	1366	750	220	50
	.94/.97	.82/.86	.72/.76	.46/.50	.40/.42	.25/.27	.20/.22	.11/.15	1179	1202	182	100	242	50
	.87/.93	.73/.81	.66/.73	.46/.49	.40/.42	.25/.27	.20/.22	.11/.15	1179	1202	455	250	242	50
100 KT [11-218]	.61/.82	.53/.70	.50/.64	.41/.47	.36/.41	.25/.27	.20/.22	.11/.15	1179	1202	911	500	242	50
	.32/.67	.32/.58	.32/.54	.30/.42	.28/.38	.24/.27	.20/.22	.11/.15	1179	1202	1366	750	242	50
	.95/.97	.81/.86	.70/.73	.48/.52	.36/.40	.28/.32	.18/.22	.10/.12	1443	1485	182	100	439	50
100 KT [11-218]	.90/.94	.76/.82	.67/.72	.48/.52	.36/.40	.28/.32	.18/.22	.10/.12	1443	1485	455	250	439	50
	.73/.87	.60/.74	.55/.66	.45/.50	.36/.40	.28/.32	.18/.22	.10/.12	1443	1485	911	500	439	50
	.49/.76	.44/.64	.41/.58	.37/.46	.32/.38	.27/.31	.18/.22	.10/.12	1443	1485	1366	750	439	50

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

YIELD	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT	FOREST BLOWDOWN DECID	WILDLAND FIRES CLASS	CLASS		
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	CONIF	I	IV	
3 KT [7-46]	5000	4700	3100	3100	2800	2300	3200	2900	1600*	800	4300	4500	4900	3400	2000	1400	3600	2300
	5500	5000	3500	3500	3200	2600	3600	3300	2000*	1000	4300	4500	4900	3400	2100	1600	3600	2300
	6000	5700	4100	4100	3900	3300	4300	3900	2600*	1200	4500	4700	5000	3600	2300	1800	3800	2600
	6700	6400	4800	4800	4600	4000	4900	4600	3300*	1200	4700	4900	5200	3900	2500	2000	4100	2800
10 KT [9-80]	8300	7600	5000	4800	4500	3700	4500	4000	1900*	1200	6200	7300	7700	6500	3000	2200	5900	3900
	8700	8100	5400	5300	5000	4100	5000	4500	2300*	1400	6200	7300	7700	6500	3000	2300	5900	3900
	9400	8800	6100	6000	5700	4800	5700	5200	3000*	1600	6300	7300	7600	6500	3300	2500	6000	4200
	10100	9500	6800	6700	6400	5500	6400	5900	3700*	1800	6500	7600	7900	6800	3600	2800	6200	4400
100 KT [11-218]	22100	20500	12900	11400	10500	7900	8800	7800	3400	2800	12500	16900	16900	16900	6800	5200	14500	8900
	22600	20900	13300	11800	10900	8300	9200	8300	3800	2800	12500	16900	16900	16900	6800	5200	14500	8900
	23300	21600	14000	12500	11600	9000	9900	9000	4500	3100	12500	16900	16900	16900	6800	5400	14500	8900
	24000	22300	14700	13200	12300	9700	10600	9700	5200	3300	12500	16900	16900	16900	7100	5600	14500	9100

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

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CHAPTER 7
 COVERAGE AND SAFETY TABLES FOR
 LOW AIRBURST
 MODERATE DAMAGE TO MATERIEL

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SHORT RANGE CANNON
.2 KT
(3-10)

COVERAGE TABLE
(Distances in meters)

M O D E R A T E D A M A G E T O T A N K S
L O W A I R B U R S T

EFFECTIVENESS									PROB	ACCURACY DATA				
RANGE	RADIUS OF TARGET								MIN	EXPT	CD/90	CEP	HOB	PEH
	25	50	75	100	125	150	175	200	RD	RD				
2000	.96/.98	.91/.95	.72/.78	.49/.52	.30/.32	.20/.22	.15/.17	.10/.12	68	70	25	12	35	5
3000	.94/.96	.77/.89	.57/.70	.40/.48	.25/.31	.17/.21	.12/.16	.10/.12	62	68	38	12	46	8
4000	.75/.91	.57/.80	.42/.61	.27/.42	.17/.27	.12/.20	.08/.15	.07/.11	53	64	51	25	53	10
5000	.22/.74	.24/.63	.19/.47	.15/.33	.10/.23	.05/.15	.05/.12	.03/.09	38	55	64	32	63	13
6000	.01/.58	.04/.49	.05/.38	.05/.27	.03/.19	.03/.13	.02/.10	.01/.07	23	48	77	38	70	15
7000	.00/.39	.00/.34	.01/.26	.02/.20	.01/.14	.01/.10	.01/.08	.01/.06	0	38	90	45	81	18
8000	.00/.29	.00/.25	.00/.20	.01/.15	.01/.12	.01/.09	.01/.07	.01/.05	0	32	102	51	88	20
9000	.00/.19	.00/.17	.00/.14	.00/.12	.01/.09	.01/.07	.01/.05	.01/.04	0	24	116	58	98	23
10000	.00/.14	.00/.13	.00/.11	.00/.09	.00/.07	.01/.06	.01/.05	.01/.04	0	21	128	64	105	25

COVERAGE TABLE
(Distances in meters)

M O D E R A T E D A M A G E T O W H E E L E D V E H I C L E S
L O W A I R B U R S T

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
RANGE	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	50	75	100	125	150	175	200	225						
2000	.95/.97	.89/.92	.72/.76	.51/.55	.35/.37	.25/.27	.20/.22	.15/.17	88	90	25	12	35	5
3000	.93/.97	.81/.89	.65/.72	.47/.53	.33/.37	.25/.27	.18/.22	.15/.17	85	89	38	19	46	8
4000	.86/.94	.71/.84	.56/.67	.42/.50	.30/.35	.22/.26	.16/.20	.12/.16	81	87	51	25	53	10
5000	.68/.87	.55/.75	.44/.59	.34/.44	.25/.31	.17/.24	.13/.18	.10/.14	73	82	64	32	63	13
6000	.47/.79	.41/.67	.34/.53	.25/.40	.20/.29	.12/.21	.10/.17	.08/.13	65	78	77	38	70	15
7000	.16/.65	.20/.55	.15/.43	.15/.33	.11/.25	.06/.19	.05/.14	.05/.11	49	70	90	45	81	18
8000	.03/.54	.04/.46	.05/.37	.05/.28	.03/.21	.03/.16	.03/.12	.02/.09	30	64	102	51	88	20
9000	.00/.40	.00/.34	.01/.28	.02/.22	.02/.18	.02/.14	.02/.11	.01/.08	0	52	116	58	98	23
10000	.00/.32	.00/.28	.01/.23	.01/.19	.01/.14	.01/.11	.01/.10	.01/.08	0	47	128	64	105	25

COVERAGE TABLE (Distances in meters)

SHORT RANGE CANNON **.2 KT** **(3-10)**

M O D E R A T E D A M A G E T O T O W E D A R T I L L E R Y **L O W A I R B U R S T**

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
RANGE	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	25	50	75	100	125	150	175	200						
2000	.95/.97	.81/.89	.55/.62	.33/.37	.20/.22	.13/.17	.10/.12	.05/.07	56	59	25	12	35	5
3000	.79/.92	.56/.76	.35/.51	.21/.31	.13/.19	.08/.13	.06/.11	.05/.07	46	54	38	19	46	8
4000	.38/.79	.32/.62	.21/.42	.12/.26	.07/.17	.05/.11	.03/.09	.02/.06	37	49	51	25	53	10
5000	.01/.54	.04/.42	.03/.29	.03/.19	.02/.12	.02/.09	.01/.07	.01/.05	13	39	64	32	63	13
6000	.00/.38	.01/.31	.02/.22	.02/.15	.01/.10	.01/.08	.01/.06	.01/.04	0	32	77	38	70	15
7000	.00/.23	.00/.19	.00/.15	.01/.11	.01/.08	.01/.06	.01/.05	.01/.04	0	23	90	45	81	18
8000	.00/.16	.00/.14	.00/.11	.01/.09	.01/.07	.01/.05	.01/.04	.01/.03	0	19	102	51	88	20
9000	.00/.10	.00/.09	.00/.08	.00/.07	.00/.05	.01/.05	.01/.04	.01/.03	0	14	116	58	98	23
10000	.00/.07	.00/.07	.00/.06	.00/.06	.00/.05	.01/.04	.01/.03	.01/.03	0	12	128	64	105	25

SAFETY DISTANCE TABLE (Distances in meters)

T R O O P S A F E T Y (M S D) ----- P R E C L U D E (L S D) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT OBSN UTIL	ACFT IN FLIGHT OV-1B ASLT	IN FLIGHT CARGO HEL	FOREST BLOWDOWN DECID	CONIF	WILDLAND FIRES CLASS CLASS	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	HEL	HEL	I	IV
2000	1100	1000	800	900	900	800	700	700	600	200	1000	1300	1400	1100	400	300	800	500
3000	1100	1000	800	900	900	800	800	700	600	200	1000	1300	1400	1100	400	300	800	500
4000	1200	1100	800	1000	900	800	800	700	700	200	1100	1300	1400	1100	400	300	800	500
5000	1200	1100	800	1000	900	800	900	800	700	200	1100	1300	1400	1100	400	300	800	500
6000	1200	1100	900	1000	1000	900	900	800	700	200	1100	1300	1400	1100	400	300	800	500
7000	1200	1100	900	1000	1000	900	900	800	700	200	1200	1300	1400	1100	500	300	800	500
8000	1200	1100	900	1000	1000	900	1000	900	700	200	1200	1300	1400	1100	500	300	800	500
9000	1200	1100	900	1100	1000	900	1000	900	700	200	1300	1300	1400	1100	500	300	800	500
10000	1300	1200	900	1100	1000	900	1100	1000	800	200	1300	1300	1400	1100	500	300	800	500

•Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

SHORT RANGE CANNON

1 KT

(5-24)

COVERAGE TABLE

(Distances in meters)

MODERATE DAMAGE TO TANKS

LOW AIRBURST

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
RANGE	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	150	200	250	275	325	400	500						
2000	.95/.97	.91/.94	.75/.77	.55/.57	.45/.47	.30/.32	.20/.22	.10/.12	180	183	25	12	60	5
3000	.95/.97	.90/.93	.75/.77	.53/.57	.45/.47	.30/.32	.20/.22	.10/.12	180	182	38	19	60	8
4000	.95/.97	.90/.92	.72/.76	.51/.56	.43/.46	.30/.32	.20/.22	.10/.12	170	182	51	25	60	10
5000	.95/.97	.84/.90	.66/.74	.45/.53	.37/.44	.27/.31	.18/.21	.10/.12	160	178	64	32	77	13
6000	.92/.96	.77/.87	.58/.70	.41/.51	.32/.42	.22/.30	.15/.20	.10/.12	150	174	77	38	84	15
7000	.84/.93	.66/.82	.48/.64	.31/.46	.26/.39	.17/.28	.11/.18	.07/.11	140	166	90	45	94	18
8000	.73/.89	.56/.77	.40/.60	.26/.43	.21/.37	.15/.26	.10/.17	.06/.10	130	150	102	51	101	20
9000	.51/.82	.38/.68	.28/.52	.16/.38	.16/.33	.11/.23	.06/.15	.03/.09	100	147	116	58	112	23
10000	.31/.75	.24/.62	.20/.47	.11/.34	.11/.29	.06/.21	.05/.14	.03/.09	80	138	128	64	119	25

COVERAGE TABLE

(Distances in meters)

MODERATE DAMAGE TO WHEELED VEHICLES

LOW AIRBURST

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
RANGE	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	225	250	300	350	400	475	700						
2000	.95/.97	.85/.87	.75/.77	.55/.57	.40/.42	.30/.32	.20/.22	.10/.12	220	225	25	12	60	5
3000	.95/.97	.82/.86	.73/.77	.55/.57	.40/.42	.30/.32	.20/.22	.10/.12	220	224	38	19	60	8
4000	.95/.97	.81/.85	.73/.77	.55/.57	.40/.42	.30/.32	.20/.22	.10/.12	220	224	51	25	60	10
5000	.95/.97	.77/.83	.70/.75	.52/.56	.40/.42	.30/.32	.20/.22	.10/.12	210	222	64	32	77	13
6000	.95/.97	.75/.81	.67/.73	.50/.55	.37/.41	.28/.32	.20/.22	.07/.11	210	220	77	38	84	15
7000	.95/.97	.69/.78	.61/.70	.47/.54	.35/.40	.26/.30	.18/.22	.06/.11	200	216	90	45	94	18
8000	.95/.97	.65/.75	.57/.68	.44/.52	.31/.38	.25/.29	.17/.21	.06/.10	190	212	102	51	101	20
9000	.90/.95	.57/.71	.51/.64	.37/.48	.27/.36	.20/.27	.15/.19	.05/.09	185	206	116	58	112	23
10000	.84/.93	.51/.68	.44/.60	.35/.46	.25/.35	.20/.27	.12/.19	.05/.09	175	201	128	64	119	25

COVERAGE TABLE

(Distances in meters)

SHORT RANGE CANNON

1 KT

(5-24)

MODERATE DAMAGE TO TOWED ARTILLERY
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	150	175	225	250	275	350	500						
2000	.95/.97	.86/.89	.75/.77	.50/.52	.40/.42	.32/.36	.20/.22	.10/.12	157	159	25	12	60	5
3000	.95/.97	.83/.88	.72/.77	.48/.52	.38/.42	.31/.36	.20/.22	.08/.12	154	150	38	19	60	4
4000	.94/.97	.78/.85	.67/.74	.45/.50	.35/.41	.30/.34	.17/.21	.06/.11	149	156	51	25	60	10
5000	.88/.94	.68/.80	.57/.68	.36/.46	.30/.37	.25/.31	.15/.19	.06/.09	135	149	64	32	77	13
6000	.80/.91	.58/.74	.48/.64	.31/.43	.25/.35	.20/.29	.11/.18	.05/.09	123	143	77	38	84	15
7000	.61/.83	.41/.66	.35/.56	.21/.38	.16/.31	.15/.26	.07/.16	.03/.08	106	133	90	45	94	18
8000	.42/.76	.30/.59	.25/.50	.16/.33	.11/.28	.11/.23	.05/.14	.02/.07	88	124	102	51	101	20
9000	.10/.64	.10/.49	.06/.42	.03/.29	.03/.24	.03/.20	.03/.12	.01/.06	46	109	116	58	114	23
10000	.03/.55	.03/.43	.03/.36	.03/.25	.02/.20	.02/.17	.02/.11	.01/.05	0	99	128	64	119	25

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT	FOREST CARGO HEL	WILDLAND FIRES BLOWDOWN DECID CONIF	CLASS I	CLASS IV
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	HEL	HEL	HEL
2000	2500	2300	1400	1400	1300	1100	1400	1300	900	400	2000	2400	2700	1800	900	600	1800
3000	2500	2300	1400	1500	1300	1100	1500	1300	900	400	2000	2400	2700	1800	900	600	1800
4000	2500	2300	1400	1500	1400	1200	1500	1300	1000	400	2100	2400	2700	1800	900	600	1800
5000	2500	2400	1400	1500	1400	1200	1500	1400	1000	400	2100	2400	2700	1800	900	600	1800
6000	2600	2400	1400	1500	1400	1200	1600	1400	1000	400	2100	2400	2700	1800	900	600	1800
7000	2600	2400	1500	1500	1400	1200	1600	1400	1000	400	2100	2400	2700	1800	900	600	1800
8000	2600	2400	1500	1600	1400	1200	1600	1400	1000	400	2100	2400	2700	1800	900	600	1800
9000	2600	2400	1500	1600	1400	1200	1600	1500	1000	400	2100	2400	2700	1800	900	600	1800
10000	2600	2400	1500	1600	1500	1300	1700	1500	1100	400	2200	2400	2700	1800	1000	700	1800

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

MEDIUM RANGE CANNON

2 KT

(6-38)

COVERAGE TABLE

(Distances in meters)

MODERATE DAMAGE TO TANKS
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	200	250	300	375	425	475	600	800						
2000	.95/.97	.85/.87	.71/.75	.50/.52	.38/.42	.30/.32	.18/.22	.10/.12	262	265	25	12	60	5
3000	.95/.97	.85/.87	.71/.75	.48/.52	.37/.41	.30/.32	.17/.21	.10/.12	250	264	38	19	67	8
4000	.92/.96	.85/.87	.71/.76	.50/.52	.38/.42	.30/.32	.18/.22	.10/.12	261	265	51	25	74	10
5000	.91/.95	.83/.87	.70/.75	.48/.52	.37/.41	.30/.32	.17/.21	.10/.12	257	264	64	32	84	13
6000	.90/.94	.80/.85	.67/.73	.45/.51	.35/.40	.27/.31	.16/.21	.10/.12	253	261	77	38	91	15
7000	.86/.92	.73/.82	.59/.70	.40/.48	.30/.38	.22/.30	.15/.20	.07/.11	232	254	90	45	102	18
8000	.80/.90	.67/.79	.50/.66	.32/.46	.26/.37	.20/.29	.13/.19	.06/.11	217	248	102	51	109	20
9000	.70/.86	.54/.74	.41/.61	.26/.42	.21/.33	.17/.27	.10/.17	.06/.10	196	237	116	58	119	23
10000	.61/.81	.46/.70	.36/.57	.21/.40	.17/.32	.15/.25	.08/.16	.05/.10	182	229	128	64	120	25
11000	.44/.75	.36/.63	.26/.52	.16/.35	.11/.28	.10/.23	.05/.14	.03/.09	156	214	141	71	137	28
12000	.33/.70	.27/.59	.21/.48	.11/.34	.11/.27	.06/.20	.05/.14	.02/.08	135	203	154	77	144	30
13000	.17/.62	.11/.52	.06/.42	.06/.30	.03/.24	.03/.19	.03/.12	.01/.07	92	185	167	84	154	33
14000	.05/.57	.03/.47	.03/.38	.03/.27	.03/.22	.03/.17	.02/.11	.01/.07	47	174	180	90	161	35
15000	.03/.50	.03/.42	.02/.33	.02/.24	.02/.19	.02/.16	.01/.10	.01/.06	3	157	193	97	172	38
16000	.02/.45	.02/.38	.02/.31	.02/.22	.02/.18	.01/.15	.01/.09	.01/.06	3	144	205	103	179	40
17000	.01/.39	.01/.32	.01/.27	.01/.19	.01/.16	.01/.13	.01/.08	.01/.05	3	130	219	110	189	43
18000	.01/.35	.01/.30	.01/.24	.01/.18	.01/.15	.01/.12	.01/.08	.01/.05	3	118	231	116	190	45
19000	.01/.30	.01/.26	.01/.21	.01/.15	.01/.13	.01/.11	.01/.07	.01/.05	3	107	244	122	207	48
20000	.00/.27	.01/.23	.01/.20	.01/.15	.01/.12	.01/.10	.01/.07	.01/.04	3	95	257	128	214	50

COVERAGE TABLE

(Distances in meters)

MODERATE DAMAGE TO WHEELED VEHICLES
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	200	325	375	475	525	600	700	900						
2000	.95/.97	.85/.87	.71/.75	.48/.52	.40/.42	.30/.32	.20/.22	.10/.12	323	332	25	12	60	5
3000	.95/.97	.85/.87	.71/.75	.47/.51	.38/.42	.30/.32	.20/.22	.10/.12	324	331	38	19	67	8
4000	.95/.97	.85/.87	.72/.76	.48/.52	.40/.42	.30/.32	.20/.22	.10/.12	327	332	51	25	74	10
5000	.95/.97	.83/.87	.71/.76	.48/.52	.40/.42	.30/.32	.20/.22	.10/.12	325	332	64	32	84	13
6000	.95/.97	.81/.86	.71/.75	.47/.51	.39/.42	.30/.32	.20/.22	.10/.12	322	331	77	38	91	15
7000	.95/.97	.79/.84	.68/.73	.45/.50	.36/.41	.28/.32	.20/.22	.10/.12	317	328	90	45	102	18
8000	.95/.97	.76/.83	.66/.72	.43/.49	.35/.40	.27/.31	.20/.22	.10/.12	309	324	102	51	109	20
9000	.93/.96	.72/.81	.61/.70	.40/.47	.32/.39	.25/.30	.17/.21	.10/.12	297	319	116	58	119	23
10000	.91/.96	.68/.79	.57/.68	.37/.46	.30/.38	.23/.29	.17/.21	.10/.12	289	314	128	64	120	25
11000	.87/.94	.62/.75	.53/.65	.35/.44	.27/.36	.20/.27	.15/.20	.08/.12	275	306	141	71	137	28
12000	.83/.92	.57/.73	.46/.62	.31/.42	.25/.34	.20/.27	.13/.19	.08/.12	264	300	154	77	144	30
13000	.75/.89	.49/.69	.40/.58	.26/.40	.21/.33	.16/.25	.12/.19	.06/.11	243	290	167	84	154	33
14000	.67/.86	.42/.66	.35/.56	.21/.37	.16/.31	.15/.24	.10/.17	.05/.10	222	281	180	90	161	35
15000	.54/.81	.34/.61	.30/.52	.16/.36	.16/.29	.11/.23	.07/.16	.03/.10	201	267	193	97	172	38
16000	.35/.77	.28/.57	.21/.49	.16/.33	.11/.28	.06/.21	.06/.16	.03/.09	180	257	205	103	179	40
17000	.20/.71	.15/.52	.11/.44	.06/.31	.06/.26	.03/.20	.03/.14	.02/.09	137	241	219	110	189	43
18000	.03/.66	.03/.49	.03/.41	.03/.29	.03/.24	.03/.19	.03/.14	.02/.08	3	226	231	116	190	45
19000	.03/.61	.03/.44	.03/.38	.03/.27	.03/.22	.02/.18	.02/.13	.01/.07	3	213	244	122	207	48
20000	.01/.56	.02/.41	.02/.35	.02/.25	.02/.21	.02/.15	.02/.12	.01/.07	3	196	257	128	214	50

COVERAGE TABLE

(Distances in meters)

MEDIUM RANGE CANNON

2 KT

(6-38)

MODERATE DAMAGE TO TOWED ARTILLERY
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	200	225	250	300	375	400	475	700						
2000	.90/.92	.85/.87	.76/.78	.50/.52	.36/.39	.31/.34	.21/.23	.10/.12	229	231	25	12	60	5
3000	.90/.92	.85/.87	.75/.78	.50/.52	.36/.39	.31/.34	.21/.24	.10/.12	227	230	38	19	67	8
4000	.89/.92	.81/.86	.73/.77	.47/.51	.35/.38	.30/.33	.20/.23	.10/.12	221	227	51	25	74	10
5000	.82/.89	.75/.82	.67/.74	.40/.48	.30/.36	.26/.32	.18/.22	.07/.11	207	221	64	32	84	13
6000	.77/.86	.68/.79	.59/.71	.37/.46	.27/.35	.25/.30	.16/.21	.06/.11	197	216	77	38	91	15
7000	.66/.81	.58/.73	.50/.65	.31/.43	.22/.32	.20/.28	.13/.19	.05/.09	177	206	90	45	102	18
8000	.57/.76	.49/.69	.41/.61	.26/.40	.17/.30	.16/.26	.11/.19	.05/.09	162	198	102	51	109	20
9000	.41/.60	.35/.61	.31/.54	.16/.35	.11/.26	.11/.23	.07/.17	.03/.08	138	184	116	58	119	23
10000	.30/.63	.25/.56	.21/.49	.11/.33	.06/.24	.06/.21	.05/.15	.02/.07	114	173	129	64	120	25
11000	.11/.54	.06/.48	.06/.43	.03/.28	.03/.20	.03/.19	.03/.14	.01/.06	69	156	141	71	137	28
12000	.03/.49	.03/.43	.03/.38	.03/.26	.03/.20	.02/.17	.02/.12	.01/.06	7	143	154	77	144	30
13000	.02/.41	.02/.37	.02/.32	.02/.22	.02/.17	.02/.16	.01/.11	.01/.05	2	126	167	84	154	33
14000	.02/.37	.02/.33	.02/.29	.01/.20	.01/.15	.01/.13	.01/.10	.01/.05	2	115	180	90	161	35
15000	.01/.31	.01/.28	.01/.25	.01/.18	.01/.14	.01/.12	.01/.09	.01/.05	2	99	193	97	172	38
16000	.01/.28	.01/.25	.01/.23	.01/.15	.01/.12	.01/.11	.01/.09	.01/.05	2	92	205	103	179	40
17000	.01/.24	.01/.21	.01/.19	.01/.14	.01/.11	.01/.10	.01/.07	.01/.04	2	78	219	110	189	43
18000	.00/.21	.01/.19	.01/.17	.01/.12	.01/.10	.01/.09	.01/.07	.01/.04	2	73	231	116	190	45
19000	.00/.18	.00/.17	.01/.15	.01/.11	.01/.09	.01/.08	.01/.07	.01/.04	2	63	244	122	207	48
20000	.00/.16	.00/.15	.00/.14	.01/.10	.01/.09	.01/.08	.01/.06	.01/.03	2	57	257	128	214	50

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM	LT DAM	LT ACFT	IN FLIGHT	FOREST		WILDLAND FIRES	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	FIXED BRG	TO BLDG	UTIL HEL	ASLT HEL	OV-1B CARGO	BLowDOWN DECID CONIF	CLASS I	CLASS IV
2000	3900	3600	2300	2300	2100	1600	2100	1800	1200	600	2900	3700	4000	2700	1300	900	2900
3000	3900	3600	2300	2300	2100	1600	2100	1900	1200	600	3000	3700	4000	2700	1400	900	2900
4000	3900	3700	2300	2300	2200	1700	2100	1900	1200	600	3000	3700	4000	2700	1400	900	2900
5000	3900	3700	2300	2400	2200	1700	2200	1900	1300	600	3000	3700	4000	2700	1400	900	2900
6000	4000	3700	2300	2400	2200	1700	2200	2000	1300	600	3000	3700	4000	2700	1400	900	2900
7000	4000	3700	2400	2400	2200	1700	2200	2000	1300	600	3000	3700	4000	2700	1400	900	2900
8000	4000	3700	2400	2400	2200	1800	2300	2000	1300	600	3000	3700	4000	2700	1400	900	2900
9000	4000	3800	2400	2500	2300	1800	2300	2100	1400	600	3100	3700	4000	2700	1400	900	2900
10000	4000	3800	2400	2500	2300	1800	2400	2100	1400	600	3100	3700	4000	2700	1400	900	2900
11000	4100	3800	2400	2500	2300	1800	2400	2200	1400	600	3200	3700	4000	2700	1500	1000	2900
12000	4100	3800	2500	2500	2300	1800	2500	2200	1400	600	3200	3700	4000	2700	1500	1000	2900
13000	4100	3800	2500	2500	2400	1900	2600	2300	1400	600	3300	3700	4000	2700	1500	1000	2900
14000	4100	3900	2500	2600	2400	1900	2600	2300	1500	600	3400	3700	4000	2700	1500	1100	2900
15000	4100	3900	2500	2600	2400	1900	2700	2400	1500	700	3400	3700	4000	2700	1600	1100	2900
16000	4200	3900	2600	2600	2400	1900	2700	2400	1500	700	3500	3700	4000	2700	1600	1100	2900
17000	4200	3900	2600	2600	2400	1900	2800	2500	1500	700	3500	3700	4000	2700	1600	1100	2900
18000	4200	4000	2600	2600	2500	2000	2800	2500	1500	700	3600	3700	4000	2700	1600	1200	2900
19000	4200	4000	2600	2700	2500	2000	2900	2600	1600	700	3600	3700	4000	2700	1600	1200	2900
20000	4300	4000	2600	2700	2500	2000	2900	2600	1600	700	3700	3700	4000	2700	1600	1200	2900

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

MEDIUM RANGE CANNON

8 KT
(9-74)

COVERAGE TABLE (Distances in meters)

MODERATE DAMAGE TO TANKS LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	400	500	600	750	850	950	1150	1500						
2000	.95/.97	.85/.87	.71/.73	.50/.52	.38/.42	.30/.32	.20/.22	.10/.12	525	528	25	12	106	5
3000	.95/.97	.85/.87	.71/.74	.50/.52	.37/.41	.30/.32	.20/.22	.10/.12	521	527	38	19	106	8
4000	.95/.97	.85/.87	.71/.74	.48/.52	.36/.41	.30/.32	.20/.22	.10/.12	518	526	51	25	106	10
5000	.95/.97	.85/.87	.70/.74	.48/.52	.36/.41	.30/.32	.20/.22	.10/.12	515	526	64	32	107	13
6000	.95/.97	.85/.87	.71/.74	.48/.52	.37/.41	.30/.32	.20/.22	.10/.12	518	527	77	38	114	15
7000	.93/.96	.85/.87	.71/.75	.49/.52	.37/.41	.30/.32	.20/.22	.10/.12	515	527	90	45	124	18
8000	.92/.96	.85/.87	.70/.74	.47/.51	.36/.41	.30/.32	.20/.22	.10/.12	516	526	102	51	131	20
9000	.91/.95	.82/.86	.68/.74	.47/.51	.36/.40	.29/.32	.20/.22	.10/.12	496	521	116	58	142	23
10000	.91/.95	.81/.86	.65/.72	.45/.50	.35/.39	.27/.31	.18/.21	.10/.12	495	517	128	64	149	25
11000	.90/.93	.75/.84	.60/.70	.41/.49	.30/.38	.25/.30	.16/.21	.10/.12	467	508	141	71	159	28
12000	.86/.92	.70/.82	.56/.68	.36/.47	.27/.37	.22/.29	.15/.20	.08/.12	446	501	154	77	166	30
13000	.81/.90	.65/.79	.50/.65	.31/.45	.25/.35	.20/.28	.13/.20	.07/.11	418	489	167	84	177	33
14000	.76/.89	.59/.77	.46/.63	.27/.43	.21/.35	.17/.27	.11/.18	.06/.11	400	479	180	90	184	35
15000	.70/.86	.53/.74	.41/.60	.26/.42	.20/.32	.15/.26	.10/.18	.06/.10	373	464	193	97	194	38
16000	.63/.83	.48/.71	.36/.57	.21/.39	.16/.31	.12/.24	.08/.16	.05/.10	355	453	205	103	201	40
17000	.52/.79	.41/.67	.31/.54	.16/.36	.15/.29	.11/.23	.07/.16	.03/.09	323	434	219	110	212	43
18000	.46/.76	.36/.64	.26/.52	.16/.35	.11/.28	.10/.22	.05/.15	.03/.09	299	421	231	116	219	45
19000	.37/.72	.26/.60	.16/.47	.11/.33	.06/.25	.06/.20	.05/.14	.02/.08	257	399	244	122	229	48
20000	.29/.68	.21/.57	.11/.46	.06/.31	.06/.24	.06/.20	.03/.14	.02/.08	223	386	257	128	236	50

COVERAGE TABLE (Distances in meters)

MODERATE DAMAGE TO WHEELED VEHICLES LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	500	675	750	925	1050	1200	1500	2000						
2000	.95/.97	.85/.87	.75/.77	.51/.54	.40/.42	.30/.32	.20/.22	.10/.12	668	670	25	12	120	5
3000	.95/.97	.85/.87	.75/.77	.51/.54	.40/.42	.30/.32	.20/.22	.10/.12	665	669	38	19	120	8
4000	.95/.97	.85/.87	.73/.77	.51/.55	.40/.42	.30/.32	.20/.22	.10/.12	663	669	51	25	120	10
5000	.95/.97	.83/.87	.72/.76	.51/.54	.40/.42	.30/.32	.20/.22	.10/.12	659	667	64	--	120	13
6000	.95/.97	.82/.86	.72/.76	.51/.54	.40/.42	.30/.32	.20/.22	.10/.12	657	666	77	38	120	15
7000	.95/.97	.82/.86	.71/.76	.50/.54	.40/.42	.30/.32	.20/.22	.10/.12	654	665	90	45	125	18
8000	.95/.97	.81/.85	.71/.76	.51/.54	.40/.42	.30/.32	.19/.22	.10/.12	651	665	102	51	132	20
9000	.93/.97	.81/.85	.71/.75	.50/.54	.39/.42	.30/.32	.17/.21	.10/.12	647	663	116	58	142	23
10000	.92/.96	.80/.84	.70/.74	.49/.53	.37/.41	.30/.32	.16/.21	.10/.12	638	661	128	64	149	25
11000	.91/.96	.78/.83	.70/.74	.47/.52	.36/.41	.28/.32	.16/.20	.10/.12	633	656	141	71	160	28
12000	.91/.95	.76/.82	.67/.73	.46/.52	.36/.41	.27/.31	.16/.20	.10/.12	626	652	154	77	167	30
13000	.91/.94	.74/.81	.65/.72	.45/.51	.35/.40	.26/.30	.16/.20	.08/.12	611	646	167	84	177	33
14000	.90/.94	.73/.80	.62/.71	.42/.50	.33/.39	.25/.30	.16/.20	.07/.11	601	641	180	90	184	35
15000	.89/.93	.69/.78	.60/.70	.40/.49	.31/.38	.23/.29	.15/.19	.07/.11	585	633	193	97	195	38
16000	.87/.92	.68/.77	.59/.69	.40/.48	.30/.37	.23/.29	.15/.19	.06/.11	575	627	205	103	202	40
17000	.84/.91	.64/.75	.55/.66	.36/.47	.27/.36	.21/.28	.13/.18	.06/.11	558	617	219	110	212	43
18000	.81/.90	.62/.74	.53/.66	.35/.46	.26/.36	.20/.27	.13/.18	.06/.10	545	610	231	116	219	45
19000	.77/.88	.56/.72	.49/.63	.31/.44	.25/.34	.17/.26	.11/.17	.06/.10	522	598	244	122	230	48
20000	.75/.87	.52/.70	.45/.61	.31/.44	.22/.34	.17/.26	.10/.17	.06/.10	506	589	257	128	237	50

COVERAGE TABLE

(Distances in meters)

MEDIUM RANGE CANNON

8 KT

(9-74)

MODERATE DAMAGE TO TOWED ARTILLERY

LOW AIR BURST

EFFECTIVENESS									PROB	ACCURACY DATA				
RANGE	RADIUS OF TARGET								MIN	EXPT	CD/90	CEP	HOB	PEH
	350	425	500	650	725	800	950	1350	RD	RD				
2000	.95/.97	.86/.91	.75/.77	.50/.52	.40/.42	.30/.32	.20/.22	.10/.12	456	458	25	12	106	5
3000	.95/.97	.86/.91	.75/.77	.50/.52	.40/.42	.31/.33	.20/.22	.10/.12	455	458	38	19	106	8
4000	.95/.97	.86/.91	.75/.77	.50/.52	.40/.42	.31/.33	.20/.22	.10/.12	453	457	51	25	106	10
5000	.94/.97	.86/.90	.75/.77	.48/.52	.40/.42	.30/.33	.20/.22	.10/.12	450	456	64	32	107	13
6000	.92/.96	.86/.89	.75/.77	.46/.51	.37/.41	.30/.32	.20/.22	.10/.12	444	453	77	39	114	15
7000	.91/.95	.83/.88	.70/.76	.43/.50	.35/.40	.28/.32	.20/.22	.10/.12	425	446	90	45	124	18
8000	.90/.94	.81/.87	.66/.74	.40/.48	.32/.39	.26/.31	.18/.22	.08/.12	413	440	102	51	131	20
9000	.89/.93	.76/.84	.62/.72	.37/.46	.30/.37	.25/.30	.16/.21	.07/.11	394	431	116	58	142	23
10000	.85/.91	.73/.82	.58/.69	.35/.44	.27/.36	.22/.29	.15/.20	.06/.11	381	423	128	64	149	25
11000	.79/.89	.65/.79	.51/.66	.31/.43	.22/.34	.20/.28	.13/.19	.06/.10	353	410	141	71	159	28
12000	.73/.87	.59/.76	.46/.64	.26/.41	.21/.33	.17/.26	.12/.19	.06/.10	334	401	150	77	166	30
13000	.63/.83	.50/.71	.36/.60	.21/.38	.16/.31	.15/.24	.10/.18	.05/.09	307	385	167	84	177	33
14000	.55/.80	.45/.69	.31/.57	.21/.37	.16/.29	.11/.24	.07/.16	.03/.09	288	373	180	90	184	35
15000	.44/.74	.35/.64	.26/.52	.16/.34	.11/.27	.07/.21	.06/.16	.02/.07	247	353	193	97	194	38
16000	.35/.71	.26/.60	.16/.50	.11/.31	.06/.24	.06/.21	.05/.15	.02/.07	215	338	205	103	201	40
17000	.21/.65	.11/.55	.11/.45	.06/.29	.06/.24	.03/.19	.03/.14	.01/.07	160	317	219	110	212	43
18000	.11/.61	.06/.51	.06/.43	.03/.27	.03/.21	.03/.18	.02/.12	.01/.06	113	302	231	116	219	45
19000	.03/.56	.03/.47	.03/.38	.03/.25	.02/.20	.02/.16	.02/.12	.01/.06	0	278	244	122	229	48
20000	.03/.52	.03/.44	.02/.35	.02/.23	.02/.19	.02/.16	.01/.11	.01/.06	0	265	257	128	236	50

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO BLDG	LT ACFT OBSN UTIL HEL	IN FLIGHT OV-1B ASLT HEL	FOREST BLOWDOWN DECID CONIF	WILDLAND FIRES CLASS I	CLASS IV
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL		
2000	7500	6900	4500	4400	4100	3200	3400	3000	1600	1100	5000	6900	7300	5900	2400	1700
3000	7500	6900	4500	4400	4100	3300	3500	3100	1600	1100	5000	6900	7300	5900	2400	1700
4000	7500	7000	4500	4400	4100	3300	3500	3100	1700	1200	5000	6900	7300	5900	2500	1700
5000	7600	7000	4600	4500	4200	3300	3600	3200	1700	1200	5000	6900	7300	5900	2500	1800
6000	7600	7000	4600	4500	4200	3300	3600	3200	1700	1200	5100	6900	7300	5900	2500	1800
7000	7600	7000	4600	4500	4200	3400	3700	3300	1800	1200	5100	6900	7300	5900	2500	1800
8000	7600	7100	4600	4500	4200	3400	3700	3300	1800	1200	5200	6900	7300	5900	2500	1800
9000	7700	7100	4700	4600	4300	3400	3800	3400	1800	1200	5300	6900	7300	5900	2600	1800
10000	7700	7100	4700	4600	4300	3400	3900	3500	1800	1200	5300	6900	7300	5900	2600	1800
11000	7700	7100	4700	4600	4300	3500	4000	3500	1900	1200	5400	6900	7300	5900	2600	1900
12000	7700	7200	4700	4600	4300	3500	4000	3600	1900	1200	5500	6900	7300	5900	2600	1900
13000	7800	7200	4800	4700	4400	3500	4100	3700	1900	1200	5500	6900	7300	5900	2700	1900
14000	7800	7200	4800	4700	4400	3500	4200	3700	1900	1200	5600	6900	7300	5900	2700	1900
15000	7800	7200	4800	4700	4400	3600	4300	3800	2000	1200	5700	6900	7300	5900	2700	2000
16000	7800	7300	4800	4700	4400	3600	4300	3900	2000	1200	5700	6900	7300	5900	2800	2000
17000	7900	7300	4900	4800	4500	3600	4400	3900	2000	1200	5800	6900	7300	5900	2800	2000
18000	7900	7300	4900	4800	4500	3600	4500	4000	2000	1200	5900	6900	7300	5900	2800	2000
19000	7900	7300	4900	4800	4500	3700	4500	4100	2100	1200	5900	6900	7300	5900	2900	2000
20000	7900	7400	4900	4800	4500	3700	4600	4100	2100	1200	6000	6900	7300	5900	2900	2100

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

FREE FLIGHT ROCKET

5 KT

TOF < 40 SEC

(8-59)

COVERAGE TABLE

(Distances in meters)

MODERATE DAMAGE TO TANKS LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	200	300	500	600	700	800	900						
5000	.95/.97	.90/.95	.76/.88	.48/.59	.35/.44	.25/.33	.18/.25	.15/.20	350	389	204	108	140	25
7000	.88/.94	.74/.90	.59/.81	.35/.52	.26/.40	.17/.30	.12/.22	.10/.18	290	365	237	130	161	31
9000	.53/.66	.43/.80	.36/.69	.21/.44	.16/.32	.11/.24	.07/.19	.05/.14	232	326	266	147	185	38
10000	.24/.60	.28/.74	.20/.64	.15/.40	.11/.29	.06/.23	.05/.17	.03/.14	193	307	283	156	196	41
11000	.03/.74	.05/.68	.11/.58	.06/.36	.06/.27	.03/.20	.03/.16	.03/.13	144	286	295	162	206	44
12000	.00/.66	.02/.60	.03/.51	.03/.32	.03/.24	.03/.20	.02/.14	.02/.11	26	259	311	171	220	48
13000	.00/.59	.01/.54	.03/.46	.02/.29	.02/.22	.02/.17	.02/.13	.01/.10	0	240	325	179	231	51
14000	.00/.53	.00/.48	.01/.41	.02/.26	.02/.19	.01/.15	.01/.12	.01/.09	0	218	341	187	241	54
15000	.00/.48	.00/.43	.01/.37	.01/.23	.01/.18	.01/.14	.01/.12	.01/.09	0	203	355	194	252	57
16000	.00/.41	.00/.38	.00/.32	.01/.21	.01/.16	.01/.12	.01/.09	.01/.08	0	178	371	202	266	61
17000	.00/.37	.00/.34	.00/.29	.01/.19	.01/.15	.01/.11	.01/.09	.01/.07	0	166	385	209	276	64
18000	.00/.32	.00/.30	.00/.26	.01/.17	.01/.14	.01/.11	.01/.09	.01/.07	0	150	400	217	287	67
19000	.00/.29	.00/.27	.00/.24	.01/.16	.01/.13	.01/.10	.01/.08	.01/.07	0	138	414	223	297	70
20000	.00/.25	.00/.23	.00/.21	.01/.14	.01/.11	.01/.09	.01/.07	.01/.07	0	125	431	232	311	74
21000	.00/.22	.00/.21	.00/.18	.01/.13	.01/.11	.01/.09	.01/.07	.01/.07	0	114	445	239	322	77
22000	.00/.20	.00/.19	.00/.17	.01/.12	.01/.10	.01/.08	.01/.07	.01/.05	0	103	461	246	332	80
23000	.00/.18	.00/.17	.00/.16	.00/.11	.01/.09	.01/.07	.01/.06	.01/.05	0	98	475	253	343	83
24000	.00/.16	.00/.15	.00/.14	.00/.10	.01/.08	.01/.07	.01/.06	.01/.05	0	90	493	262	357	87
25000	.00/.14	.00/.13	.00/.12	.00/.09	.01/.08	.01/.07	.01/.06	.01/.05	0	80	507	269	371	91
26000	.00/.13	.00/.12	.00/.11	.00/.09	.00/.08	.01/.06	.01/.05	.01/.05	0	72	523	276	378	93
27000	.00/.12	.00/.11	.00/.11	.00/.09	.00/.07	.01/.06	.01/.05	.01/.05	0	70	538	283	388	96
28000	.00/.11	.00/.10	.00/.10	.00/.08	.00/.07	.01/.06	.01/.05	.01/.04	0	66	555	292	402	100
29000	.00/.10	.00/.09	.00/.09	.00/.07	.00/.07	.00/.06	.01/.05	.01/.04	0	63	569	298	413	103
30000	.00/.09	.00/.09	.00/.08	.00/.07	.00/.06	.00/.05	.01/.05	.01/.04	0	59	586	306	423	106
31000	.00/.08	.00/.08	.00/.07	.00/.06	.00/.06	.00/.05	.01/.05	.01/.04	0	55	600	313	434	109
32000	.00/.07	.00/.07	.00/.07	.00/.06	.00/.06	.00/.05	.01/.04	.01/.04	0	46	618	321	448	113
33000	.00/.07	.00/.07	.00/.06	.00/.06	.00/.05	.00/.05	.01/.04	.01/.04	0	45	632	328	458	116

COVERAGE TABLE

(Distances in meters)

MODERATE DAMAGE TO WHEELED VEHICLES LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	200	400	500	650	750	900	1050	1200						
5000	.95/.97	.85/.91	.73/.81	.55/.61	.43/.48	.30/.33	.21/.25	.15/.17	489	508	204	108	140	25
7000	.95/.97	.77/.88	.66/.77	.48/.58	.37/.45	.26/.32	.20/.24	.15/.17	461	495	237	130	161	31
9000	.90/.95	.68/.83	.57/.72	.40/.53	.31/.42	.22/.29	.16/.22	.11/.16	425	475	266	147	185	38
10000	.85/.94	.62/.81	.52/.69	.37/.51	.30/.40	.20/.28	.15/.21	.11/.15	404	464	283	156	196	41
11000	.79/.92	.56/.78	.46/.66	.34/.49	.26/.39	.17/.27	.12/.20	.10/.15	380	451	295	162	206	44
12000	.67/.68	.47/.73	.39/.62	.26/.45	.21/.36	.15/.26	.10/.19	.07/.14	343	432	311	171	220	48
13000	.53/.84	.38/.69	.30/.59	.21/.43	.16/.33	.11/.24	.07/.18	.05/.13	312	414	325	179	231	51
14000	.37/.81	.26/.65	.24/.55	.16/.40	.11/.32	.06/.22	.06/.17	.05/.13	275	399	341	187	241	54
15000	.09/.76	.18/.61	.17/.52	.11/.38	.06/.30	.06/.21	.03/.16	.03/.12	219	378	355	194	252	57
16000	.01/.69	.03/.56	.03/.47	.03/.35	.03/.27	.03/.19	.03/.15	.02/.11	0	348	371	202	266	61
17000	.01/.65	.03/.52	.03/.44	.03/.32	.03/.26	.03/.19	.02/.13	.02/.10	0	334	385	209	276	64
18000	.00/.59	.02/.48	.02/.40	.02/.29	.02/.24	.02/.18	.02/.13	.02/.10	0	305	400	217	287	67
19000	.00/.56	.02/.45	.02/.38	.02/.28	.02/.22	.02/.16	.01/.12	.01/.09	0	293	414	223	297	70
20000	.00/.50	.01/.39	.02/.34	.01/.25	.01/.20	.01/.15	.01/.11	.01/.09	0	269	431	232	311	74
21000	.00/.46	.01/.37	.01/.31	.01/.23	.01/.19	.01/.14	.01/.11	.01/.08	0	247	445	239	322	77
22000	.00/.43	.01/.34	.01/.29	.01/.22	.01/.17	.01/.13	.01/.10	.01/.08	0	236	461	246	332	80
23000	.00/.39	.00/.31	.01/.27	.01/.20	.01/.16	.01/.12	.01/.09	.01/.08	0	223	475	253	343	83
24000	.00/.34	.00/.28	.01/.24	.01/.18	.01/.15	.01/.11	.01/.09	.01/.07	0	195	493	262	357	87
25000	.00/.32	.00/.26	.01/.22	.01/.17	.01/.15	.01/.11	.01/.09	.01/.06	0	185	507	269	371	91
26000	.00/.30	.00/.24	.01/.21	.01/.17	.01/.14	.01/.10	.01/.08	.01/.06	0	179	523	276	378	93
27000	.00/.27	.00/.22	.00/.19	.01/.15	.01/.12	.01/.10	.01/.07	.01/.06	0	168	538	283	388	96
28000	.00/.23	.00/.20	.00/.18	.01/.14	.01/.12	.01/.09	.01/.07	.01/.06	0	144	555	292	402	100
29000	.00/.22	.00/.19	.00/.17	.01/.13	.01/.11	.01/.09	.01/.07	.01/.06	0	140	569	298	413	103
30000	.00/.21	.00/.18	.00/.16	.01/.13	.01/.11	.01/.08	.01/.07	.01/.05	0	136	586	306	423	106
31000	.00/.19	.00/.17	.00/.15	.01/.12	.01/.10	.01/.08	.01/.06	.01/.05	0	130	600	313	434	109
32000	.00/.17	.00/.15	.00/.13	.01/.11	.01/.10	.01/.07	.01/.06	.01/.05	0	122	618	321	448	113
33000	.00/.15	.00/.13	.00/.12	.00/.10	.01/.09	.01/.07	.01/.06	.01/.05	0	100	632	328	458	116

FREE FLIGHT ROCKET

5 KT

COVERAGE TABLE (Distances in meters)

TOF < 40 SEC

(8-59)

MODERATE DAMAGE TO TOWED ARTILLERY LOW AIRBURST

EFFECTIVENESS									PROB	ACCURACY DATA				
RANGE	RADIUS OF TARGET								MIN	EXPT	CD/90	CEP	HOB	PEH
	25	100	150	300	400	500	600	700	RD	RD				
5000	.95/.97	.88/.94	.80/.92	.55/.75	.40/.57	.26/.40	.17/.28	.13/.21	260	310	204	108	140	25
7000	.56/.68	.50/.65	.46/.61	.32/.62	.24/.47	.16/.33	.11/.24	.07/.17	205	279	237	130	161	31
9000	.00/.71	.02/.68	.04/.65	.05/.48	.06/.37	.03/.26	.03/.19	.03/.14	91	233	266	147	185	39
10000	.00/.63	.00/.60	.01/.57	.03/.43	.03/.33	.02/.24	.02/.16	.02/.13	0	212	283	156	196	41
11000	.00/.55	.00/.53	.00/.50	.02/.38	.02/.29	.02/.21	.02/.16	.01/.12	0	192	295	162	206	44
12000	.00/.47	.00/.45	.00/.42	.01/.32	.01/.24	.01/.18	.01/.13	.01/.11	0	169	311	171	220	49
13000	.00/.40	.00/.39	.00/.37	.01/.26	.01/.21	.01/.17	.01/.12	.01/.09	0	150	325	179	231	51
14000	.00/.35	.00/.34	.00/.32	.00/.25	.01/.19	.01/.15	.01/.11	.01/.09	0	137	341	187	241	54
15000	.00/.30	.00/.29	.00/.28	.00/.22	.01/.17	.01/.13	.01/.10	.01/.08	0	120	355	194	252	57
16000	.00/.26	.00/.25	.00/.24	.00/.19	.01/.15	.01/.12	.01/.09	.01/.07	0	108	371	202	266	61
17000	.00/.22	.00/.21	.00/.21	.00/.17	.00/.14	.01/.11	.01/.08	.01/.07	0	98	385	209	276	64
18000	.00/.19	.00/.19	.00/.18	.00/.15	.00/.12	.01/.10	.01/.08	.01/.06	0	87	400	217	287	67
19000	.00/.17	.00/.17	.00/.16	.00/.14	.00/.11	.01/.09	.01/.07	.01/.06	0	82	414	223	297	70
20000	.00/.15	.00/.14	.00/.14	.00/.12	.00/.10	.00/.08	.01/.07	.01/.05	0	72	431	232	311	74
21000	.00/.13	.00/.12	.00/.12	.00/.11	.00/.09	.00/.08	.01/.06	.01/.05	0	64	445	239	322	77
22000	.00/.11	.00/.11	.00/.11	.00/.10	.00/.09	.00/.07	.01/.06	.01/.05	0	59	461	246	332	80
23000	.00/.10	.00/.10	.00/.10	.00/.09	.00/.08	.00/.07	.01/.06	.01/.05	0	56	475	253	343	83
24000	.00/.09	.00/.09	.00/.09	.00/.08	.00/.07	.00/.06	.00/.05	.01/.05	0	52	493	262	357	87
25000	.00/.08	.00/.08	.00/.08	.00/.07	.00/.06	.00/.06	.00/.05	.01/.04	0	47	507	269	371	91
26000	.00/.07	.00/.07	.00/.07	.00/.07	.00/.06	.00/.06	.00/.05	.01/.04	0	44	523	276	378	93
27000	.00/.07	.00/.07	.00/.07	.00/.06	.00/.06	.00/.05	.00/.05	.01/.04	0	39	538	283	388	96
28000	.00/.06	.00/.06	.00/.06	.00/.06	.00/.05	.00/.05	.00/.05	.00/.04	0	37	555	292	402	100
29000	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.04	0	36	569	298	413	103
30000	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.04	0	34	586	306	423	106
31000	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.04	0	33	600	313	434	109
32000	.00/.04	.00/.04	.00/.04	.00/.04	.00/.04	.00/.04	.00/.04	.00/.04	0	31	618	321	448	113
33000	.00/.04	.00/.04	.00/.04	.00/.04	.00/.04	.00/.04	.00/.04	.00/.04	0	29	632	328	458	116

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT		FOREST		WILDLAND FIRES	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER				OV-1B	HEL	DECID	CONIF	CLASS I	CLASS IV
5000	6300	5800	3900	3900	3700	2900	3400	3100	1800	1000	4500	5600	6000	4500	2200	1500	4500	2900
7000	6300	5900	4000	3900	3700	2900	3500	3200	1800	1000	4600	5600	6000	4500	2200	1600	4500	2900
9000	6300	5900	4000	4000	3700	3000	3700	3300	1800	1000	4800	5600	6000	4500	2300	1600	4500	2900
10000	6400	5900	4000	4000	3700	3000	3800	3400	1900	1000	4900	5600	6000	4500	2300	1700	4500	2900
11000	6400	5900	4000	4000	3700	3000	3800	3500	1900	1000	4900	5600	6000	4500	2300	1700	4500	2900
12000	6400	6000	4100	4000	3800	3000	4000	3500	1900	1000	5100	5600	6000	4500	2400	1800	4500	2900
13000	6400	6000	4100	4100	3800	3100	4000	3600	2000	1100	5100	5600	6000	4500	2400	1800	4500	2900
14000	6500	6000	4100	4100	3800	3100	4100	3700	2000	1100	5200	5600	6000	4500	2500	1900	4500	2900
15000	6500	6100	4200	4100	3900	3100	4200	3800	2000	1100	5300	5600	6000	4500	2500	1900	4500	2900
16000	6500	6100	4200	4200	3900	3200	4300	3800	2000	1100	5400	5600	6000	4500	2500	1900	4500	2900
17000	6600	6100	4200	4200	3900	3200	4400	3900	2100	1200	5400	5600	6000	4500	2600	2000	4500	2900
18000	6600	6200	4300	4200	4000	3200	4400	4000	2100	1200	5500	5600	6000	4500	2600	2000	4500	2900
19000	6600	6200	4300	4300	4000	3200	4500	4100	2100	1200	5600	5600	6000	4500	2600	2000	4500	2900
20000	6700	6200	4300	4300	4000	3300	4600	4100	2200	1200	5700	5600	6000	4500	2700	2000	4500	2900
21000	6700	6200	4300	4300	4100	3300	4700	4200	2200	1200	5700	5600	6000	4500	2700	2000	4500	2900
22000	6700	6300	4400	4300	4100	3300	4700	4300	2200	1200	5800	5600	6000	4500	2700	2000	4500	2900
23000	6800	6300	4400	4400	4100	3400	4800	4300	2300	1200	5800	5600	6000	4500	2800	2000	4500	3000
24000	6800	6300	4400	4400	4100	3400	4900	4400	2300	1200	5900	5600	6000	4500	2800	2000	4500	3000
25000	6800	6400	4500	4400	4200	3400	5000	4400	2300	1200	6000	5600	6000	4500	2800	2000	4500	3000
26000	6800	6400	4500	4500	4200	3500	5100	4500	2400	1300	6000	5600	6000	4500	2800	2000	4500	3000
27000	6900	6400	4500	4500	4200	3500	5100	4500	2400	1300	6100	5600	6000	4500	2800	2100	4500	3000
28000	6900	6500	4600	4500	4300	3500	5100	4600	2400	1300	6200	5600	6000	4500	2800	2100	4500	3000
29000	6900	6500	4600	4600	4300	3600	5200	4700	2400	1300	6200	5600	6000	4500	2800	2100	4500	3000
30000	7000	6500	4600	4600	4300	3600	5300	4700	2500	1300	6200	5600	6000	4500	2800	2100	4500	3000
31000	7000	6600	4700	4600	4400	3600	5300	4800	2500	1300	6300	5600	6000	4500	2800	2100	4500	3000
32000	7000	6600	4700	4700	4400	3700	5400	4800	2500	1300	6300	5600	6000	4500	2800	2100	4500	3000
33000	7100	6600	4700	4700	4400	3700	5400	4800	2600	1300	6400	5600	6000	4500	2800	2100	4500	3000

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

FREE FLIGHT ROCKET

5 KT

TOF > 40 SEC

(8-59)

COVERAGE TABLE

(Distances in meters)

MODERATE DAMAGE TO TANKS LOW AIRBURST

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
RANGE	RADIUS OF TARGET										CD/90	CEP	90% VERTICAL	
	25	50	100	200	300	400	500	600					BRACKET	
22000	.00/.24	.00/.24	.00/.23	.00/.21	.00/.18	.00/.15	.01/.12	.01/.10	0	116	461	246	135	432
24000	.00/.25	.00/.25	.00/.25	.00/.23	.00/.20	.00/.17	.01/.14	.01/.11	0	125	493	262	135	425
26000	.00/.26	.00/.26	.00/.26	.00/.24	.00/.21	.00/.18	.01/.15	.01/.12	0	138	523	276	135	417
28000	.00/.27	.00/.26	.00/.26	.00/.24	.00/.22	.00/.18	.01/.15	.01/.12	0	149	555	292	135	410
30000	.00/.27	.00/.27	.00/.26	.00/.24	.00/.22	.00/.19	.01/.16	.01/.13	0	159	586	306	135	402
32000	.00/.26	.00/.26	.00/.26	.00/.24	.00/.22	.00/.19	.00/.16	.01/.13	0	167	618	321	135	395
34000	.00/.26	.00/.26	.00/.25	.00/.24	.00/.22	.00/.19	.00/.16	.01/.14	0	174	649	336	135	386
36000	.00/.25	.00/.25	.00/.25	.00/.23	.00/.21	.00/.19	.00/.16	.01/.14	0	180	680	350	135	380
38000	.00/.24	.00/.24	.00/.24	.00/.23	.00/.21	.00/.18	.00/.16	.01/.14	0	185	712	366	135	371
40000	.00/.23	.00/.23	.00/.23	.00/.22	.00/.20	.00/.18	.00/.16	.01/.14	0	189	743	380	135	364
42000	.00/.22	.00/.22	.00/.22	.00/.21	.00/.20	.00/.18	.00/.16	.00/.13	0	193	775	396	135	356
44000	.00/.21	.00/.21	.00/.21	.00/.20	.00/.19	.00/.17	.00/.15	.00/.13	0	196	806	410	135	349
46000	.00/.20	.00/.20	.00/.20	.00/.20	.00/.18	.00/.17	.00/.15	.00/.13	0	200	839	426	135	341
48000	.00/.20	.00/.20	.00/.19	.00/.19	.00/.18	.00/.16	.00/.15	.00/.13	0	202	870	440	135	334
50000	.00/.19	.00/.19	.00/.19	.00/.18	.00/.17	.00/.16	.00/.14	.00/.13	0	204	902	455	135	325
52000	.00/.18	.00/.18	.00/.18	.00/.17	.00/.16	.00/.15	.00/.14	.00/.12	0	206	934	470	135	325
54000	.00/.17	.00/.17	.00/.17	.00/.16	.00/.16	.00/.15	.00/.13	.00/.12	0	208	966	485	135	325
56000	.00/.16	.00/.16	.00/.16	.00/.16	.00/.15	.00/.14	.00/.13	.00/.12	0	210	998	500	135	325
58000	.00/.16	.00/.16	.00/.16	.00/.16	.00/.15	.00/.14	.00/.13	.00/.12	0	212	1010	508	135	325
60000	.00/.16	.00/.16	.00/.16	.00/.15	.00/.15	.00/.14	.00/.13	.00/.11	0	214	1031	519	135	325

COVERAGE TABLE

(Distances in meters)

MODERATE DAMAGE TO WHEELED VEHICLES LOW AIRBURST

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
RANGE	RADIUS OF TARGET										CD/90	CEP	90% VERTICAL	
	25	50	100	200	400	550	700	1100					BRACKET	
22000	.00/.58	.00/.57	.00/.57	.00/.53	.02/.42	.02/.31	.02/.23	.02/.10	0	284	461	246	135	432
24000	.00/.57	.00/.57	.00/.56	.00/.53	.01/.42	.02/.33	.02/.24	.02/.11	0	289	493	262	135	425
26000	.00/.57	.00/.57	.00/.56	.00/.54	.01/.43	.02/.34	.02/.25	.02/.11	0	305	523	276	135	417
28000	.00/.57	.00/.57	.00/.56	.00/.53	.01/.44	.02/.34	.02/.26	.02/.12	0	316	555	292	135	410
30000	.00/.57	.00/.56	.00/.56	.00/.53	.01/.44	.02/.35	.02/.27	.02/.12	0	327	586	306	135	402
32000	.00/.55	.00/.55	.00/.55	.00/.52	.01/.43	.02/.35	.03/.27	.03/.13	0	335	618	321	135	395
34000	.00/.54	.00/.54	.00/.53	.00/.51	.01/.43	.02/.35	.03/.27	.03/.13	0	343	649	336	135	386
36000	.00/.53	.00/.52	.00/.52	.00/.50	.01/.42	.02/.34	.03/.27	.03/.13	0	349	680	350	135	380
38000	.00/.51	.00/.51	.00/.50	.00/.48	.01/.41	.02/.34	.03/.27	.03/.13	0	354	712	366	135	371
40000	.00/.49	.00/.49	.00/.49	.00/.47	.01/.40	.02/.33	.03/.27	.03/.14	0	359	743	380	135	364
42000	.00/.48	.00/.47	.00/.47	.00/.45	.01/.39	.02/.33	.03/.26	.03/.14	0	363	775	396	135	356
44000	.00/.46	.00/.46	.00/.45	.00/.44	.01/.38	.02/.32	.03/.26	.04/.14	0	366	806	410	135	349
46000	.00/.44	.00/.44	.00/.44	.00/.42	.01/.37	.02/.31	.03/.26	.04/.14	0	370	839	426	135	341
48000	.00/.42	.00/.42	.00/.42	.00/.40	.00/.35	.02/.30	.03/.25	.04/.14	0	372	870	440	135	334
50000	.00/.41	.00/.40	.00/.40	.00/.39	.00/.34	.02/.30	.03/.25	.04/.14	0	375	902	455	135	325
52000	.00/.39	.00/.39	.00/.39	.00/.37	.00/.33	.01/.29	.02/.24	.04/.14	0	376	934	470	135	325
54000	.00/.37	.00/.37	.00/.37	.00/.36	.00/.32	.01/.28	.02/.24	.04/.14	0	379	966	485	135	325
56000	.00/.36	.00/.36	.00/.36	.00/.35	.00/.31	.01/.27	.02/.23	.04/.14	0	380	998	500	135	325
58000	.00/.35	.00/.35	.00/.35	.00/.34	.00/.31	.01/.27	.02/.23	.04/.14	0	383	1010	508	135	325
60000	.00/.34	.00/.34	.00/.34	.00/.33	.00/.30	.01/.26	.02/.23	.04/.14	0	385	1031	519	135	325

FREE FLIGHT ROCKET

5 KT

COVERAGE TABLE (Distances in meters)

TOF > 40 SEC

(8-59)

MODERATE DAMAGE TO TOWED ARTILLERY LOW AIRBURST

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
RANGE	RADIUS OF TARGET										CD/90	CEP	90% VERTICAL	
	25	50	75	100	125	150	175	200					BRACKET	
22000	.00/.11	.00/.11	.00/.11	.00/.11	.00/.11	.00/.10	.00/.10	.00/.10	0	54	461	246	135	432
24000	.00/.13	.00/.12	.00/.12	.00/.12	.00/.12	.00/.12	.00/.12	.00/.11	0	66	493	262	135	425
26000	.00/.13	.00/.13	.00/.13	.00/.13	.00/.13	.00/.13	.00/.12	.00/.12	0	75	523	276	135	417
28000	.00/.14	.00/.14	.00/.14	.00/.13	.00/.13	.00/.13	.00/.13	.00/.13	0	83	555	292	135	410
30000	.00/.14	.00/.14	.00/.14	.00/.14	.00/.14	.00/.13	.00/.13	.00/.13	0	91	586	306	135	402
32000	.00/.14	.00/.14	.00/.14	.00/.14	.00/.13	.00/.13	.00/.13	.00/.13	0	97	618	321	135	395
34000	.00/.14	.00/.14	.00/.14	.00/.13	.00/.13	.00/.13	.00/.13	.00/.13	0	102	649	336	135	386
36000	.00/.13	.00/.13	.00/.13	.00/.13	.00/.13	.00/.13	.00/.13	.00/.12	0	107	680	350	135	380
38000	.00/.13	.00/.13	.00/.13	.00/.13	.00/.13	.00/.13	.00/.12	.00/.12	0	111	712	366	135	371
40000	.00/.12	.00/.12	.00/.12	.00/.12	.00/.12	.00/.12	.00/.12	.00/.12	0	114	743	380	135	364
42000	.00/.12	.00/.12	.00/.12	.00/.12	.00/.12	.00/.12	.00/.12	.00/.11	0	117	775	396	135	356
44000	.00/.11	.00/.11	.00/.11	.00/.11	.00/.11	.00/.11	.00/.11	.00/.11	0	120	806	410	135	349
46000	.00/.11	.00/.11	.00/.11	.00/.11	.00/.11	.00/.11	.00/.11	.00/.11	0	122	839	426	135	341
48000	.00/.10	.00/.10	.00/.10	.00/.10	.00/.10	.00/.10	.00/.10	.00/.10	0	124	870	440	135	334
50000	.00/.10	.00/.10	.00/.10	.00/.10	.00/.10	.00/.10	.00/.10	.00/.10	0	126	902	455	135	325
52000	.00/.09	.00/.10	.00/.10	.00/.09	.00/.09	.00/.09	.00/.09	.00/.09	0	128	934	470	135	325
54000	.00/.09	.00/.09	.00/.09	.00/.09	.00/.09	.00/.09	.00/.09	.00/.09	0	129	966	485	135	325
56000	.00/.09	.00/.09	.00/.09	.00/.09	.00/.09	.00/.09	.00/.09	.00/.08	0	131	998	500	135	325
58000	.00/.09	.00/.09	.00/.09	.00/.09	.00/.09	.00/.09	.00/.08	.00/.08	0	132	1010	508	135	325
60000	.00/.08	.00/.08	.00/.08	.00/.08	.00/.08	.00/.08	.00/.08	.00/.08	0	134	1031	519	135	325

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT CARGO	FOREST BLOWDOWN DECID CONIF	WILDLAND FIRES CLASS CLASS	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	I	IV
22000	6700	6300	4400	4300	4100	3300	4600	4200	2200	1200	5600	5600	6000	4500	2700	2000
24000	6800	6300	4400	4400	4200	3400	4600	4200	2300	1200	5500	5600	6000	4500	2700	2000
26000	6800	6400	4500	4500	4200	3500	4700	4200	2400	1300	5500	5600	6000	4500	2700	2000
28000	6900	6500	4600	4500	4300	3500	4700	4300	2400	1300	5500	5600	6000	4500	2700	2100
30000	7000	6500	4600	4600	4300	3600	4800	4400	2500	1300	5500	5600	6000	4500	2700	2100
32000	7000	6600	4700	4700	4400	3700	4900	4400	2500	1300	5500	5600	6000	4500	2700	2100
34000	7100	6700	4800	4700	4500	3700	4900	4500	2600	1300	5500	5600	6000	4500	2700	2100
36000	7200	6700	4800	4800	4500	3800	5000	4500	2700	1300	5400	5600	6000	4500	2700	2100
38000	7200	6800	4900	4900	4600	3800	5100	4600	2700	1300	5500	5600	6000	4500	2700	2100
40000	7300	6800	4900	4900	4700	3900	5100	4700	2800	1400	5500	5600	5900	4500	2800	2200
42000	7400	6900	5000	5000	4700	4000	5200	4700	2900	1400	5500	5600	6000	4500	2800	2200
44000	7400	7000	5100	5000	4800	4000	5200	4800	2900	1400	5500	5600	6000	4600	2800	2200
46000	7500	7000	5100	5100	4800	4100	5300	4900	3000	1400	5500	5700	6000	4600	2800	2200
48000	7500	7100	5200	5200	4900	4200	5400	4900	3000	1400	5600	5700	6000	4600	2800	2200
50000	7600	7200	5300	5200	5000	4200	5400	5000	3100	1400	5600	5700	6100	4600	2800	2200
52000	7700	7200	5300	5300	5000	4300	5500	5000	3200	1400	5600	5700	6100	4600	2800	2300
54000	7700	7300	5400	5400	5100	4400	5600	5100	3200	1400	5600	5800	6100	4600	2800	2300
56000	7800	7400	5400	5400	5200	4400	5600	5200	3300	1500	5600	5800	6100	4700	2900	2300
58000	7800	7400	5500	5400	5200	4400	5600	5200	3300	1500	5600	5800	6100	4700	2900	2300
60000	7800	7400	5500	5500	5200	4500	5700	5200	3400	1500	5700	5800	6100	4700	2900	2300

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

FREE FLIGHT ROCKET

20 KT

TOF < 40 SEC

(9-105)

COVERAGE TABLE

(Distances in meters)

MODERATE DAMAGE TO TANKS
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB	ACCURACY DATA				
	RADIUS OF TARGET								MIN	EXPT				
	300	600	700	950	1050	1200	1400	1800	RD	RD	CD/90	CEP	HOB	PEH
5000	.95/.97	.80/.91	.77/.83	.53/.57	.44/.47	.32/.36	.24/.27	.15/.17	684	700	204	108	171	25
7000	.95/.97	.82/.89	.74/.81	.50/.56	.41/.46	.31/.35	.22/.26	.12/.16	653	693	237	130	192	31
9000	.95/.97	.76/.86	.66/.77	.41/.52	.36/.44	.26/.34	.20/.25	.11/.15	618	674	266	147	217	39
10000	.95/.97	.72/.85	.62/.76	.41/.51	.31/.42	.25/.33	.17/.24	.10/.15	588	664	283	156	227	41
11000	.93/.96	.68/.82	.57/.73	.36/.49	.27/.40	.21/.32	.15/.23	.10/.14	553	651	295	162	239	44
12000	.90/.95	.61/.80	.49/.70	.31/.46	.26/.39	.17/.30	.13/.21	.08/.14	524	633	311	171	252	48
13000	.80/.94	.50/.77	.45/.67	.26/.44	.21/.37	.16/.28	.12/.21	.06/.13	497	617	325	179	262	51
14000	.80/.92	.49/.74	.41/.65	.26/.43	.21/.36	.15/.27	.10/.20	.06/.13	470	601	341	187	273	54
15000	.73/.90	.44/.71	.36/.62	.21/.40	.16/.33	.12/.27	.10/.19	.05/.12	439	583	355	194	283	57
16000	.60/.86	.35/.67	.30/.58	.16/.38	.11/.31	.11/.24	.06/.18	.03/.11	392	557	371	202	297	61
17000	.40/.63	.29/.63	.25/.55	.11/.36	.11/.30	.06/.23	.05/.17	.03/.10	351	536	385	209	308	64
18000	.32/.80	.22/.60	.16/.52	.11/.34	.06/.28	.06/.22	.03/.16	.03/.10	304	515	400	217	319	67
19000	.14/.76	.15/.57	.11/.49	.06/.32	.06/.27	.03/.20	.03/.15	.02/.10	248	491	414	223	329	70
20000	.05/.71	.06/.52	.03/.45	.03/.29	.03/.25	.03/.20	.02/.14	.02/.09	145	464	431	232	343	74
21000	.02/.67	.03/.49	.03/.42	.03/.26	.03/.24	.02/.19	.02/.13	.01/.08	0	438	445	239	353	77
22000	.02/.63	.03/.47	.03/.40	.02/.26	.02/.22	.02/.17	.02/.13	.01/.08	0	420	461	246	364	80
23000	.01/.59	.02/.43	.02/.37	.02/.25	.02/.21	.02/.16	.01/.12	.01/.08	0	400	475	253	374	83
24000	.00/.55	.02/.40	.02/.35	.02/.23	.02/.20	.01/.15	.01/.12	.01/.07	0	370	493	262	389	87
25000	.00/.50	.02/.37	.01/.31	.01/.21	.01/.18	.01/.14	.01/.10	.01/.07	0	347	507	269	402	91
26000	.00/.48	.01/.35	.01/.31	.01/.21	.01/.17	.01/.13	.01/.10	.01/.07	0	334	523	276	409	93
27000	.00/.45	.01/.33	.01/.29	.01/.19	.01/.16	.01/.13	.01/.09	.01/.07	0	311	538	283	420	96
28000	.00/.41	.01/.30	.01/.26	.01/.18	.01/.15	.01/.12	.01/.09	.01/.06	0	294	555	292	434	100
29000	.00/.38	.01/.28	.01/.25	.01/.17	.01/.15	.01/.12	.01/.09	.01/.06	0	279	569	298	444	103
30000	.00/.35	.01/.27	.01/.23	.01/.16	.01/.14	.01/.12	.01/.09	.01/.05	0	262	586	306	455	106
31000	.00/.33	.01/.25	.01/.22	.01/.16	.01/.13	.01/.11	.01/.08	.01/.05	0	243	600	313	465	109
32000	.00/.31	.01/.23	.01/.20	.01/.14	.01/.13	.01/.10	.01/.07	.01/.05	0	231	618	321	479	113
33000	.00/.29	.01/.22	.01/.19	.01/.13	.01/.11	.01/.09	.01/.07	.01/.05	0	221	632	328	490	116

COVERAGE TABLE

(Distances in meters)

MODERATE DAMAGE TO WHEELED VEHICLES
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN	EXPT	ACCURACY DATA					
	RADIUS OF TARGET										RD	RD	CD/90	CEP	HOB	PEH
	500	750	900	1200	1350	1450	1800	2600								
5000	.95/.97	.90/.92	.80/.84	.54/.57	.42/.46	.30/.39	.22/.26	.10/.12	870	887	204	108	171	25		
7000	.95/.97	.80/.91	.77/.83	.52/.56	.41/.45	.35/.38	.22/.26	.10/.12	863	884	237	130	192	31		
9000	.95/.97	.85/.90	.75/.81	.50/.55	.40/.45	.35/.38	.21/.25	.10/.12	843	874	266	147	217	38		
10000	.95/.97	.83/.90	.72/.80	.49/.55	.38/.44	.33/.37	.21/.24	.10/.12	832	868	283	156	227	41		
11000	.95/.97	.82/.89	.71/.79	.47/.54	.37/.43	.31/.36	.21/.25	.10/.12	817	862	295	162	239	44		
12000	.94/.97	.80/.88	.68/.77	.45/.53	.35/.42	.30/.36	.20/.24	.08/.12	797	852	311	171	252	48		
13000	.92/.96	.77/.87	.66/.76	.42/.51	.33/.41	.30/.35	.18/.23	.08/.12	782	844	325	179	262	51		
14000	.91/.96	.75/.86	.64/.75	.41/.51	.32/.40	.27/.35	.18/.23	.07/.11	764	836	341	187	273	54		
15000	.90/.95	.73/.84	.61/.73	.40/.50	.30/.39	.27/.34	.16/.22	.07/.11	750	826	355	194	283	57		
16000	.87/.94	.69/.83	.57/.72	.36/.48	.30/.39	.25/.33	.15/.22	.06/.11	725	812	371	202	297	61		
17000	.85/.93	.66/.81	.54/.70	.36/.47	.26/.37	.22/.31	.15/.21	.06/.11	703	801	385	209	308	64		
18000	.82/.92	.62/.79	.50/.68	.31/.45	.26/.36	.21/.31	.12/.20	.06/.10	678	788	400	217	319	67		
19000	.78/.91	.58/.77	.46/.66	.31/.45	.21/.35	.20/.31	.12/.20	.06/.10	652	773	414	223	329	70		
20000	.72/.88	.52/.75	.42/.64	.26/.42	.21/.34	.16/.29	.10/.19	.05/.10	614	754	431	232	343	74		
21000	.66/.87	.48/.72	.39/.62	.21/.41	.16/.33	.16/.29	.10/.19	.05/.09	581	737	445	239	353	77		
22000	.60/.84	.41/.70	.35/.59	.21/.40	.16/.32	.11/.27	.07/.18	.03/.09	547	720	461	246	364	80		
23000	.51/.82	.37/.68	.30/.57	.16/.37	.16/.31	.11/.27	.06/.17	.03/.09	511	700	475	253	374	83		
24000	.30/.78	.31/.64	.25/.54	.11/.36	.11/.28	.11/.26	.06/.17	.02/.08	454	675	493	262	389	87		
25000	.26/.75	.20/.61	.16/.51	.06/.34	.06/.28	.06/.24	.03/.16	.02/.07	364	647	507	269	402	91		
26000	.20/.73	.15/.59	.11/.50	.06/.34	.06/.28	.06/.23	.03/.16	.02/.07	321	636	523	276	409	93		
27000	.05/.69	.03/.57	.03/.48	.03/.32	.03/.26	.03/.23	.03/.15	.01/.07	0	601	538	283	420	96		
28000	.05/.67	.03/.54	.03/.45	.03/.30	.03/.24	.03/.21	.02/.13	.01/.07	0	582	555	292	434	100		
29000	.05/.64	.03/.52	.03/.43	.03/.29	.03/.23	.02/.19	.02/.13	.01/.07	0	566	569	298	444	103		
30000	.01/.60	.02/.48	.02/.41	.02/.28	.02/.23	.02/.19	.02/.13	.01/.07	0	526	586	306	455	106		
31000	.01/.58	.02/.47	.02/.39	.02/.26	.02/.22	.02/.19	.02/.13	.01/.06	0	513	600	313	465	109		
32000	.01/.55	.02/.44	.02/.37	.02/.25	.02/.21	.02/.18	.01/.12	.01/.06	0	493	618	321	479	113		
33000	.01/.52	.02/.42	.02/.35	.02/.24	.01/.20	.01/.17	.01/.12	.01/.06	0	477	632	328	490	116		

FREE FLIGHT ROCKET

20 KT

COVERAGE TABLE (Distances in meters)

TOF <40 SEC
(9-105)

MODERATE DAMAGE TO TOWED ARTILLERY
LOW AIRBURST

EFFECTIVENESS									PROB	ACCURACY DATA				
RANGE	RADIUS OF TARGET								MIN	EXPT	CD/90	CEP	HOB	PEH
	250	450	550	800	900	1100	1300	1500	RD	RD				
5000	.95/.97	.88/.93	.78/.87	.50/.56	.40/.45	.26/.30	.18/.22	.13/.17	55A	589	204	108	171	25
7000	.95/.97	.81/.90	.71/.82	.42/.53	.32/.43	.22/.29	.16/.20	.11/.16	521	570	237	130	192	31
9000	.91/.96	.71/.85	.59/.76	.36/.48	.26/.38	.17/.26	.12/.18	.10/.14	465	542	266	147	217	38
10000	.87/.94	.64/.83	.54/.73	.31/.46	.22/.36	.15/.24	.10/.18	.08/.13	436	527	283	156	227	41
11000	.81/.92	.58/.80	.47/.70	.26/.43	.21/.35	.12/.24	.10/.17	.06/.13	410	512	295	162	238	44
12000	.69/.89	.47/.75	.38/.65	.21/.40	.16/.33	.10/.21	.07/.16	.05/.11	371	489	311	171	252	48
13000	.57/.85	.36/.71	.31/.61	.16/.37	.11/.29	.07/.20	.05/.15	.03/.11	330	469	325	179	262	51
14000	.42/.61	.28/.67	.24/.57	.11/.35	.11/.29	.06/.19	.03/.14	.03/.10	283	448	341	187	273	54
15000	.19/.77	.20/.63	.16/.54	.06/.33	.06/.27	.03/.18	.03/.12	.02/.10	231	427	355	194	283	57
16000	.05/.71	.09/.58	.06/.49	.03/.30	.03/.24	.03/.16	.02/.12	.02/.10	142	397	371	202	297	61
17000	.02/.67	.03/.53	.03/.46	.03/.28	.03/.23	.02/.15	.02/.11	.01/.08	38	374	385	209	308	64
18000	.02/.62	.03/.50	.03/.42	.02/.26	.02/.21	.02/.15	.01/.11	.01/.08	0	353	400	217	318	67
19000	.01/.57	.02/.46	.02/.39	.02/.24	.02/.20	.01/.13	.01/.10	.01/.08	0	331	414	223	329	70
20000	.00/.52	.02/.41	.02/.35	.01/.22	.01/.18	.01/.12	.01/.09	.01/.07	0	304	431	232	343	74
21000	.00/.48	.02/.39	.01/.32	.01/.21	.01/.17	.01/.12	.01/.08	.01/.07	0	286	445	239	353	77
22000	.00/.44	.01/.36	.01/.30	.01/.19	.01/.16	.01/.12	.01/.08	.01/.07	0	263	461	246	364	80
23000	.00/.41	.01/.33	.01/.28	.01/.18	.01/.15	.01/.10	.01/.08	.01/.06	0	250	475	253	374	83
24000	.00/.37	.01/.30	.01/.25	.01/.17	.01/.14	.01/.09	.01/.07	.01/.06	0	231	493	262	389	87
25000	.00/.33	.00/.27	.01/.24	.01/.15	.01/.13	.01/.09	.01/.07	.01/.06	0	206	507	269	402	91
26000	.00/.31	.00/.26	.01/.22	.01/.15	.01/.13	.01/.09	.01/.07	.01/.06	0	200	523	276	409	93
27000	.00/.29	.00/.24	.01/.21	.01/.14	.01/.11	.01/.09	.01/.07	.01/.06	0	190	538	283	420	96
28000	.00/.26	.00/.22	.00/.19	.01/.13	.01/.11	.01/.08	.01/.07	.01/.05	0	176	555	292	434	100
29000	.00/.24	.00/.20	.00/.18	.01/.12	.01/.11	.01/.08	.01/.06	.01/.05	0	162	569	298	444	103
30000	.00/.22	.00/.19	.00/.17	.01/.12	.01/.10	.01/.08	.01/.05	.01/.05	0	151	586	306	455	106
31000	.00/.21	.00/.18	.00/.16	.01/.11	.01/.09	.01/.07	.01/.05	.01/.05	0	146	600	313	465	109
32000	.00/.19	.00/.16	.00/.15	.01/.11	.01/.09	.01/.07	.01/.05	.01/.05	0	136	618	321	479	113
33000	.00/.18	.00/.15	.00/.14	.01/.09	.01/.08	.01/.07	.01/.05	.01/.04	0	129	632	328	490	116

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN	IN FLIGHT		FOREST		WILDLAND FIRES	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	ASLT	CARGO	DECID	CONIF	I	IV
5000	10900	10000	6200	5800	5400	4400	4800	4200	2000	1400	6500	9000	9300	8700	3300	2400	7100	4800
7000	10900	10000	6200	5900	5500	4400	4800	4400	2000	1500	6600	9000	9300	8700	3400	2500	7100	4800
9000	10900	10000	6200	5900	5500	4500	5100	4500	2100	1500	6800	9000	9300	8700	3500	2600	7100	4800
10000	10900	10000	6200	5900	5500	4500	5100	4600	2100	1500	6900	9000	9300	8700	3500	2600	7100	4800
11000	11000	10000	6300	5900	5500	4500	5200	4700	2100	1500	7000	9000	9300	8700	3500	2600	7100	4800
12000	11000	10100	6300	6000	5600	4600	5300	4800	2200	1500	7100	9000	9300	8700	3600	2700	7100	4800
13000	11000	10100	6300	6000	5600	4600	5400	4800	2200	1500	7200	9000	9300	8700	3600	2700	7100	4800
14000	11100	10100	6400	6000	5600	4600	5500	4900	2300	1500	7200	9000	9300	8700	3700	2700	7100	4800
15000	11100	10200	6400	6100	5700	4600	5600	5000	2300	1500	7300	9000	9300	8700	3700	2700	7100	4800
16000	11100	10200	6400	6100	5700	4700	5700	5100	2400	1500	7400	9000	9300	8700	3800	2800	7100	4800
17000	11100	10200	6400	6100	5700	4700	5700	5200	2400	1600	7500	9000	9300	8700	3800	2800	7100	4800
18000	11200	10300	6500	6200	5700	4700	5800	5200	2500	1600	7600	9000	9300	8700	3800	2900	7100	4800
19000	11200	10300	6500	6200	5800	4800	5900	5300	2500	1600	7600	9000	9300	8700	3900	2900	7100	4800
20000	11200	10300	6500	6200	5800	4800	6000	5400	2600	1600	7700	9000	9300	8700	3900	3000	7100	4800
21000	11300	10400	6600	6200	5800	4800	6100	5500	2600	1600	7800	9000	9300	8700	4000	3000	7100	4800
22000	11300	10400	6600	6300	5900	4900	6200	5500	2700	1700	7900	9000	9300	8700	4000	3000	7100	4800
23000	11300	10400	6600	6300	5900	4900	6300	5600	2700	1700	8000	9000	9300	8700	4000	3100	7100	4800
24000	11400	10400	6700	6300	5900	4900	6400	5700	2800	1700	8100	9000	9300	8700	4000	3100	7100	4800
25000	11400	10500	6700	6400	6000	4900	6400	5800	2800	1700	8200	9000	9300	8700	4000	3100	7100	4800
26000	11400	10500	6700	6400	6000	5000	6500	5800	2800	1800	8200	9000	9300	8700	4100	3200	7100	4800
27000	11500	10500	6700	6400	6000	5000	6600	5900	2900	1800	8300	9000	9300	8700	4100	3200	7100	4800
28000	11500	10600	6800	6500	6100	5000	6700	6000	2900	1800	8400	9000	9300	8700	4200	3200	7100	4800
29000	11500	10600	6800	6500	6100	5100	6700	6000	3000	1800	8400	9000	9300	8700	4200	3300	7100	4800
30000	11500	10600	6800	6500	6100	5100	6800	6100	3000	1900	8500	9000	9300	8700	4300	3300	7100	4800
31000	11600	10700	6900	6500	6100	5100	6900	6200	3100	1900	8600	9000	9300	8700	4300	3300	7100	4800
32000	11600	10700	6900	6600	6200	5200	7000	6300	3200	1900	8700	9000	9300	8700	4400	3400	7100	4800
33000	11600	10700	6900	6600	6200	5200	7000	6300	3200	1900	8700	9000	9300	8700	4500	3400	7100	4800

Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

FREE FLIGHT ROCKET

20 KT

TOF > 40 SEC

(9-105)

COVERAGE TABLE

(Distances in meters)

MODERATE DAMAGE TO TANKS LOW AIRBURST

EFFECTIVENESS									PROB	ACCURACY DATA				
RANGE	RADIUS OF TARGET								MIN	EXPT	90% VERTICAL			
	25	100	300	600	750	1000	1200	1800	RD	RD	CD/90	CEP	BRACKET	
22000	.00/.77	.00/.76	.04/.70	.05/.51	.05/.40	.03/.26	.03/.19	.02/.08	0	453	461	246	165	482
24000	.00/.78	.00/.77	.04/.71	.05/.53	.05/.42	.03/.27	.03/.20	.02/.09	211	472	493	262	165	475
26000	.00/.78	.01/.77	.05/.72	.10/.54	.06/.43	.04/.29	.04/.21	.02/.09	211	489	523	276	165	467
28000	.00/.78	.02/.77	.06/.72	.11/.55	.07/.44	.04/.20	.04/.22	.03/.10	211	502	555	292	165	460
30000	.01/.78	.03/.77	.09/.72	.12/.55	.08/.45	.04/.21	.04/.23	.03/.10	211	515	586	306	165	452
32000	.01/.77	.03/.76	.09/.71	.12/.55	.09/.45	.05/.21	.05/.23	.03/.10	211	524	619	321	165	445
34000	.01/.76	.03/.75	.10/.70	.14/.55	.12/.46	.10/.21	.06/.23	.04/.11	316	533	649	336	165	436
36000	.01/.75	.03/.74	.09/.69	.14/.54	.13/.46	.11/.22	.06/.23	.04/.11	316	539	680	350	165	430
38000	.01/.74	.03/.73	.08/.68	.14/.54	.15/.45	.12/.22	.07/.23	.04/.11	316	546	712	366	165	421
40000	.01/.72	.02/.72	.07/.67	.14/.53	.15/.45	.12/.22	.08/.24	.04/.11	316	551	743	380	165	414
42000	.01/.71	.02/.70	.06/.66	.14/.53	.15/.45	.12/.22	.09/.24	.05/.11	316	556	775	396	165	406
44000	.01/.69	.02/.68	.05/.64	.13/.52	.14/.44	.12/.22	.09/.24	.05/.11	316	560	806	410	165	399
46000	.00/.67	.02/.67	.04/.63	.12/.51	.14/.44	.13/.22	.10/.24	.05/.12	401	564	839	426	165	391
48000	.00/.66	.01/.65	.04/.61	.11/.50	.13/.43	.13/.22	.10/.24	.05/.12	401	566	870	440	165	384
50000	.00/.64	.01/.63	.03/.60	.10/.49	.12/.42	.12/.21	.10/.24	.05/.12	401	569	902	455	165	375
52000	.00/.62	.01/.62	.03/.58	.09/.48	.11/.41	.12/.21	.10/.24	.05/.12	401	572	934	470	165	369
54000	.00/.60	.00/.60	.03/.57	.08/.47	.10/.41	.12/.21	.10/.24	.05/.12	401	574	966	485	165	365
56000	.00/.58	.00/.58	.02/.55	.07/.46	.09/.40	.11/.31	.10/.24	.05/.12	401	576	998	500	165	365
58000	.00/.58	.00/.58	.02/.55	.07/.45	.09/.40	.12/.21	.10/.24	.06/.12	401	579	1010	508	165	365
60000	.00/.57	.00/.57	.02/.54	.06/.45	.09/.39	.11/.20	.10/.24	.06/.12	401	582	1031	519	165	365

COVERAGE TABLE

(Distances in meters)

MODERATE DAMAGE TO WHEELED VEHICLES LOW AIRBURST

EFFECTIVENESS									PROB	ACCURACY DATA				
RANGE	RADIUS OF TARGET								MIN	EXPT	90% VERTICAL			
	100	350	500	1050	1200	1450	1800	2600	RD	RD	CD/90	CEP	BRACKET	
22000	.95/.96	.82/.92	.70/.88	.34/.52	.24/.41	.19/.28	.12/.19	.05/.09	570	749	461	246	165	482
24000	.94/.95	.81/.92	.69/.87	.34/.53	.25/.42	.20/.29	.12/.19	.05/.10	636	759	493	262	165	475
26000	.92/.95	.79/.91	.68/.87	.35/.53	.26/.43	.20/.30	.13/.20	.05/.10	636	768	523	276	165	467
28000	.91/.94	.77/.90	.67/.86	.36/.54	.27/.43	.21/.30	.13/.20	.05/.10	636	772	555	292	165	460
30000	.89/.93	.75/.90	.65/.86	.36/.54	.28/.44	.21/.31	.14/.21	.05/.10	636	779	586	306	165	452
32000	.86/.93	.72/.89	.63/.85	.37/.54	.28/.44	.22/.31	.14/.21	.06/.10	636	784	619	321	165	445
34000	.83/.93	.70/.89	.61/.85	.37/.54	.30/.44	.21/.32	.15/.21	.06/.10	685	791	649	336	165	436
36000	.79/.92	.67/.88	.58/.84	.37/.53	.30/.44	.21/.32	.15/.21	.06/.10	685	794	680	350	165	430
38000	.75/.91	.63/.87	.56/.83	.37/.53	.30/.44	.22/.32	.15/.21	.06/.10	685	798	712	366	165	421
40000	.70/.90	.60/.86	.53/.82	.36/.53	.30/.44	.22/.32	.16/.22	.06/.10	685	800	743	380	165	414
42000	.65/.89	.56/.85	.50/.81	.35/.52	.30/.44	.23/.32	.16/.22	.06/.10	685	803	775	396	165	406
44000	.58/.88	.52/.84	.47/.79	.35/.52	.30/.44	.23/.32	.16/.22	.06/.11	685	805	806	410	165	399
46000	.52/.86	.48/.82	.44/.78	.34/.51	.30/.44	.23/.32	.16/.22	.06/.11	729	807	839	426	165	391
48000	.46/.85	.44/.81	.42/.77	.33/.51	.29/.43	.23/.32	.16/.22	.06/.11	729	808	870	440	165	384
50000	.40/.84	.39/.80	.39/.76	.32/.50	.29/.43	.23/.32	.16/.22	.06/.11	729	810	902	455	165	375
52000	.34/.82	.35/.78	.36/.74	.31/.50	.28/.43	.23/.32	.16/.22	.06/.11	729	811	934	470	165	369
54000	.28/.81	.31/.77	.33/.73	.30/.49	.27/.42	.22/.32	.16/.22	.06/.11	729	813	966	485	165	365
56000	.22/.79	.27/.75	.30/.71	.29/.48	.26/.42	.22/.32	.16/.22	.06/.11	729	813	998	500	165	365
58000	.21/.79	.26/.75	.29/.71	.28/.48	.26/.42	.22/.32	.16/.22	.06/.11	729	816	1010	508	165	365
60000	.18/.78	.24/.74	.27/.70	.28/.48	.26/.42	.22/.32	.16/.22	.06/.11	729	817	1031	519	165	365

FREE FLIGHT ROCKET

20 KT

COVERAGE TABLE (Distances in meters)

TOF > 40 SEC
(9-105)

MODERATE DAMAGE TO TOWED ARTILLERY
LOW AIRBURST

EFFECTIVENESS									PROB	ACCURACY DATA				
RANGE	RADIUS OF TARGET								MIN	EXPT	90% VERTICAL			
	25	50	100	250	450	650	900	1300	RD	RD	CD/90	CEP	BRACKET	
22000	.00/.56	.00/.56	.00/.55	.00/.50	.02/.39	.02/.37	.01/.16	.01/.08	0	286	461	246	165	482
24000	.00/.58	.00/.57	.00/.57	.00/.52	.02/.41	.02/.29	.01/.17	.01/.09	0	308	493	262	165	475
26000	.00/.59	.00/.58	.00/.58	.00/.53	.02/.43	.02/.31	.02/.19	.02/.10	0	327	523	276	165	467
28000	.00/.59	.00/.59	.00/.58	.00/.54	.02/.44	.03/.32	.02/.20	.02/.10	0	343	555	292	165	460
30000	.00/.59	.00/.59	.00/.58	.00/.54	.02/.44	.03/.33	.02/.21	.02/.11	0	357	586	306	165	452
32000	.00/.59	.00/.58	.00/.58	.00/.54	.02/.44	.03/.33	.02/.21	.02/.11	0	367	618	321	165	445
34000	.00/.58	.00/.58	.00/.57	.00/.53	.02/.44	.03/.34	.02/.22	.02/.11	0	378	649	336	165	436
36000	.00/.57	.00/.57	.00/.56	.00/.52	.02/.44	.03/.34	.03/.22	.02/.11	0	386	680	350	165	430
38000	.00/.56	.00/.55	.00/.55	.00/.52	.02/.43	.03/.34	.03/.23	.02/.12	0	393	712	366	165	421
40000	.00/.54	.00/.54	.00/.53	.00/.50	.02/.43	.03/.33	.03/.23	.02/.12	0	399	743	380	165	414
42000	.00/.53	.00/.53	.00/.52	.00/.49	.02/.42	.04/.33	.03/.23	.02/.12	0	405	775	396	165	406
44000	.00/.51	.00/.51	.00/.50	.00/.48	.02/.41	.03/.33	.03/.23	.02/.12	0	409	806	410	165	399
46000	.00/.49	.00/.49	.00/.49	.00/.46	.02/.40	.03/.32	.03/.23	.02/.12	161	413	839	426	165	391
48000	.00/.48	.00/.48	.00/.47	.00/.45	.02/.39	.03/.32	.03/.23	.02/.12	161	417	870	440	165	384
50000	.00/.46	.00/.46	.00/.46	.00/.44	.01/.38	.03/.31	.03/.22	.02/.12	161	420	902	455	165	375
52000	.00/.44	.00/.44	.00/.44	.00/.42	.01/.37	.03/.30	.03/.22	.02/.12	161	423	934	470	165	369
54000	.00/.43	.00/.43	.00/.43	.00/.41	.01/.36	.03/.30	.03/.22	.03/.12	161	426	966	485	165	365
56000	.00/.41	.00/.41	.00/.41	.00/.39	.01/.35	.02/.29	.03/.22	.03/.12	161	428	998	500	165	365
58000	.00/.41	.00/.41	.00/.41	.00/.39	.01/.35	.02/.29	.03/.22	.03/.13	161	431	1010	508	165	365
60000	.00/.40	.00/.40	.00/.40	.00/.38	.01/.34	.02/.29	.03/.22	.03/.13	161	434	1031	519	165	365

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO BLDG	LT ACFT OBSN UTIL HEL	IN FLIGHT			FOREST		WILDLAND FIRES						
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER				BRG	BLDG	HEL	HEL	HEL	OV-1B		BLOWDOWN	DECID	CONIF	CLASS I	CLASS IV
																		ASLT	CARGO					
22000	11300	10400	6600	6300	5900	4900	6000	5400	2600	1600	7700	9000	9300	8700	3900	2900	7100	4800						
24000	11400	10400	6700	6300	5900	4900	6100	5500	2700	1600	7700	9000	9300	8700	3900	3000	7100	4800						
26000	11400	10500	6700	6400	6000	5000	6200	5500	2700	1700	7700	9000	9300	8700	3900	3000	7100	4800						
28000	11500	10600	6800	6500	6100	5000	6200	5600	2800	1700	7700	9000	9300	8700	3900	3000	7100	4800						
30000	11500	10600	6800	6500	6100	5100	6300	5700	2900	1700	7700	9000	9300	8700	3900	3000	7100	4800						
32000	11600	10700	6900	6600	6200	5200	6300	5700	2900	1700	7700	9000	9300	8700	3900	3000	7100	4800						
34000	11700	10800	7000	6600	6200	5200	6300	5700	3000	1700	7500	9000	9300	8700	3900	3000	7100	4800						
36000	11700	10800	7000	6700	6300	5300	6400	5800	3000	1700	7500	9000	9300	8700	3900	3000	7100	4800						
38000	11800	10900	7100	6800	6400	5300	6400	5800	3100	1700	7500	9000	9300	8700	3900	3000	7100	4800						
40000	11900	10900	7200	6800	6400	5400	6500	5900	3100	1700	7500	9000	9300	8700	3900	3000	7100	4800						
42000	11900	11000	7200	6900	6500	5500	6600	6000	3200	1800	7500	9000	9300	8700	3900	3000	7100	4900						
44000	12000	11100	7300	7000	6500	5500	6600	6000	3300	1800	7500	9000	9300	8700	4000	3100	7100	4900						
46000	12000	11100	7300	7000	6600	5600	6700	6100	3300	1800	7500	9000	9300	8700	4000	3100	7100	4900						
48000	12100	11200	7400	7100	6700	5700	6700	6100	3400	1800	7500	9000	9300	8700	4000	3100	7100	4900						
50000	12200	11200	7500	7100	6700	5700	6800	6200	3400	1800	7500	9000	9300	8700	4000	3100	7100	4900						
52000	12200	11300	7500	7200	6800	5800	6900	6300	3500	1800	7400	9000	9300	8700	4000	3100	7100	5000						
54000	12300	11400	7600	7300	6900	5800	6900	6300	3600	1900	7500	9000	9300	8700	4000	3200	7100	5000						
56000	12300	11400	7600	7300	6900	5900	7000	6400	3600	1900	7500	9000	9300	8700	4000	3200	7100	5000						
58000	12400	11500	7700	7300	6900	5900	7000	6400	3700	1900	7500	9000	9300	8700	4000	3200	7100	5000						
60000	12400	11500	7700	7400	7000	6000	7000	6400	3700	1900	7500	9000	9300	8700	4100	3200	7100	5000						

GUIDED MISSILE
10 KT
(9-80)

COVERAGE TABLE
 (Distances in meters)

M O D E R A T E D A M A G E T O T A N K S
L O W A I R B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	250	400	600	800	1000	1200	1400						
50-150 Km	.00/.40	.00/.38	.01/.35	.03/.29	.05/.24	.04/.18	.05/.14	.03/.11	284	420	911	500	242	50

COVERAGE TABLE
 (Distances in meters)

M O D E R A T E D A M A G E T O W H E E L E D V E H I C L E S
L O W A I R B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	300	500	600	850	1100	1400	1900						
50-150 Km	.03/.65	.07/.61	.14/.55	.17/.51	.19/.41	.18/.31	.14/.21	.08/.12	561	637	911	500	242	50

GUIDED MISSILE 10 KT (9-80)

COVERAGE TABLE (Distances in meters)

M O D E R A T E D A M A G E T O T O W E D A R T I L L E R Y
L O W A I R B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	300	400	500	600	700	800	1000						
50-150 Km	.00/.25	.00/.23	.00/.22	.00/.20	.00/.18	.01/.16	.02/.15	.02/.11	60	302	911	500	242	50

SAFETY DISTANCE TABLE (Distances in meters)

T R O O P S A F E T Y (M S D) ----- P R E C L U D E (L S D) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT	CARGO HEL	FOREST BLOWDOWN DECID	CONIF	WILDLAND FIRES CLASS	CLASS
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	HEL		I	IV
50-150 Km	9400	8800	6100	6000	5700	4800	5700	5200	3000	1600	6300	7300	7600	6500	3300	2500	4000	4200

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

GUIDED MISSILE
50 KT
(11-159)

COVERAGE TABLE
(Distances in meters)

M O D E R A T E D A M A G E T O T A N K S
L O W A I R B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	500	900	1400	1650	1900	2400	3200						
50-150 Km.	.73/.91	.61/.86	.50/.73	.39/.51	.32/.41	.26/.31	.16/.21	.08/.12	987	1057	911	500	287	50

COVERAGE TABLE
(Distances in meters)

M O D E R A T E D A M A G E T O W H E E L E D V E H I C L E S
L O W A I R B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	300	600	900	1850	2100	2500	3100	3800						
50-150 Km	.91/.95	.82/.93	.71/.87	.45/.52	.37/.42	.26/.31	.16/.20	.10/.12	1298	1347	911	500	287	50

GUIDED MISSILE

50 KT

(11-159)

COVERAGE TABLE

(Distances in meters)

MODERATE DAMAGE TO TOWED ARTILLERY
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	600	850	1100	1300	1600	1900	2600						
50-150 Km.	.37/.83	.37/.72	.35/.61	.32/.50	.28/.41	.21/.30	.15/.22	.08/.12	.762	.866	.911	.500	.287	.50

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD FIXED BRG	LT DAM BLDG	LT DAM HEL	ACFT OBSN HEL	IN FLIGHT OV-1B HEL	CARGO HEL	FOREST BLOWDOWN DECID	CONIF	WILDLAND FIRES CLASS I	CLASS IV
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER										
50-150 Km	17500	10000	10200	9300	8700	7000	7800	7000	3700	2400	9400	12700	12900	12700	5100	4100	10300	6700	

GUIDED MISSILE
100 KT
(11-218)

COVERAGE TABLE
 (Distances in meters)

M O D E R A T E D A M A G E T O T A N K S
 L O W A I R B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	400	700	1000	2000	2300	2700	3200	4200						
50-150 Km	.91/.96	.82/.93	.72/.87	.40/.51	.32/.41	.23/.30	.16/.20	.08/.12	1288	1439	911	500	439	50

COVERAGE TABLE
 (Distances in meters)

M O D E R A T E D A M A G E T O W H E E L E D V E H I C L E S
 L O W A I R B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	1000	1400	1700	2600	3000	3450	4300	5300						
50-150 Km	.91/.96	.81/.90	.72/.83	.46/.52	.36/.40	.26/.31	.16/.20	.10/.12	1791	1864	911	500	439	50

GUIDED MISSILE

100 KT

(11-218)

COVERAGE TABLE

(Distances in meters)

MODERATE DAMAGE TO TOWED ARTILLERY
LOW AIRBURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	400	700	1500	1800	2100	2600	3400						
50-150 Km	.81/.93	.71/.90	.60/.84	.38/.53	.29/.41	.24/.31	.15/.21	.07/.12	988	1143	911	500	437	50

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT OBSN UTIL	ACFT IN FLIGHT ASLT	OV-10 CARGO HEL	FOREST BLOWDOWN DECID	CONIF	WILDLAND FIRES CLASS	CLASS
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	HEL	HEL	I	IV
50-150 Km	23300	21600	14000	12500	11600	9000	9900	9000	4500	3100	12500	16900	16900	16900	6200	5400	14500	8900

MARK 50 BOMB

COVERAGE TABLE (Distances in meters)

MODERATE DAMAGE TO TANKS LOW AIRBURST

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
YIELD	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	25	50	75	100	250	325	425	600						
3 KT [7-46]	.00/.57	.00/.56	.00/.55	.00/.54	.01/.40	.01/.31	.01/.22	.01/.12	0	15r	182	100	220	50
	.00/.28	.00/.28	.00/.28	.00/.27	.00/.23	.00/.20	.01/.17	.01/.11	0	15r	455	250	220	50
	.00/.10	.00/.10	.00/.10	.00/.10	.00/.09	.00/.09	.00/.08	.00/.07	0	15r	911	500	220	50
	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.04	0	15r	1366	750	220	50
	100	150	200	600	700	800	900	1500						
10 KT [9-80]	.95/.94	.90/.93	.81/.91	.21/.53	.16/.42	.11/.33	.11/.26	.03/.09	28R	429	182	100	242	50
	.12/.77	.17/.76	.19/.74	.16/.45	.15/.38	.11/.31	.11/.25	.03/.09	28R	429	455	250	242	50
	.00/.40	.00/.40	.00/.39	.13/.29	.04/.27	.05/.24	.06/.21	.03/.09	28R	429	911	500	242	50
	.00/.22	.00/.22	.00/.22	.00/.19	.00/.17	.00/.16	.01/.15	.02/.08	28R	429	1366	750	242	50
	1000	1300	1500	2000	2300	2700	3200	3800						
100 KT [11-218]	.95/.97	.85/.90	.71/.82	.41/.54	.32/.41	.23/.30	.16/.20	.11/.16	128R	1439	182	100	439	50
	.91/.95	.78/.87	.68/.79	.41/.54	.32/.41	.23/.30	.16/.20	.11/.16	128R	1439	455	250	439	50
	.72/.87	.62/.78	.55/.71	.40/.51	.32/.41	.23/.30	.16/.20	.11/.16	128R	1439	911	500	439	50
	.46/.76	.43/.68	.41/.62	.34/.47	.30/.39	.22/.29	.16/.20	.11/.16	128R	1439	1366	750	439	50

COVERAGE TABLE (Distances in meters)

MODERATE DAMAGE TO WHEELED VEHICLES LOW AIRBURST

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
YIELD	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
3 KT [7-46]	100	200	300	400	500	600	700	1000						
	.20/.85	.24/.79	.16/.68	.11/.54	.06/.40	.03/.28	.03/.21	.03/.11	124	290	182	100	220	50
	.00/.56	.01/.52	.03/.46	.04/.39	.05/.32	.03/.25	.03/.20	.03/.11	124	290	455	250	220	50
	.00/.23	.00/.23	.00/.21	.00/.20	.00/.18	.01/.16	.01/.14	.00/.10	124	290	911	500	220	50
	.00/.12	.00/.12	.00/.11	.00/.11	.00/.11	.00/.10	.00/.09	.00/.08	124	290	1366	750	220	50
10 KT [9-80]	400	550	600	950	1000	1200	1450	1900						
	.93/.96	.80/.89	.74/.85	.36/.48	.31/.43	.21/.30	.15/.20	.04/.12	561	637	182	100	242	50
	.67/.87	.56/.77	.53/.74	.34/.45	.30/.41	.21/.29	.15/.20	.08/.12	561	637	455	250	242	50
	.11/.58	.15/.53	.17/.51	.20/.37	.19/.35	.17/.27	.14/.20	.08/.12	561	637	911	500	242	50
	.00/.37	.01/.35	.02/.34	.15/.27	.05/.26	.08/.22	.09/.17	.07/.11	561	637	1366	750	242	50
100 KT [11-218]	1400	1900	2100	2700	3000	3300	4100	4900						
	.95/.97	.80/.85	.70/.75	.45/.50	.36/.40	.30/.33	.18/.22	.12/.16	1791	1864	182	100	439	50
	.91/.95	.77/.83	.69/.75	.45/.50	.36/.40	.30/.33	.18/.22	.12/.16	1791	1864	455	250	439	50
	.81/.90	.66/.77	.61/.70	.44/.49	.36/.40	.30/.33	.18/.22	.12/.16	1791	1864	911	500	439	50
	.63/.82	.53/.70	.50/.64	.41/.47	.35/.40	.30/.33	.18/.22	.12/.16	1791	1864	1366	750	439	50

MARK 50 BOMB

COVERAGE TABLE (Distances in meters)

MODERATE DAMAGE TO TOWED ARTILLERY LOW AIRBURST

YIELD	EFFECTIVENESS RADIUS OF TARGET								PROB MIN RD	EXPT RD	ACCURACY DATA			
	25	50	75	100	150	175	300	475			CD/90	CEP	HOB	PEH
3 KT [7-46]	.00/.39	.00/.39	.00/.38	.00/.37	.00/.33	.00/.31	.01/.20	.01/.10	0	91	182	100	220	50
	.00/.16	.00/.16	.00/.16	.00/.16	.00/.15	.00/.15	.00/.12	.00/.08	0	91	455	250	220	50
	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.04	0	91	911	500	220	50
	.00/.02	.00/.02	.00/.02	.00/.02	.00/.02	.00/.02	.00/.02	.00/.02	0	91	1366	750	220	50
10 KT [9-80]	100	200	300	500	600	700	900	1100	60	302	182	100	242	50
	.04/.81	.05/.76	.03/.67	.03/.43	.03/.32	.03/.24	.02/.15	.02/.10	60	302	455	250	242	50
	.00/.57	.00/.54	.02/.48	.03/.35	.03/.28	.03/.23	.02/.14	.02/.10	60	302	911	500	242	50
	.00/.25	.00/.25	.00/.23	.00/.20	.00/.18	.01/.16	.01/.12	.02/.09	60	302	1366	750	242	50
100 KT [11-218]	700	1000	1150	1600	1800	2100	2600	3100	980	1143	182	100	430	50
	.95/.97	.83/.91	.71/.84	.37/.53	.30/.43	.22/.31	.15/.21	.10/.15	980	1143	455	250	430	50
	.90/.95	.74/.86	.65/.79	.37/.52	.30/.43	.22/.31	.15/.21	.10/.15	980	1143	911	500	430	50
	.60/.84	.51/.74	.47/.68	.35/.48	.29/.41	.22/.31	.15/.21	.10/.15	980	1143	1366	750	430	50

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

YIELD	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT	FOREST BLOWDOWN DECID CONIF	WILDLAND FIRES CLASS CLASS	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	I	IV
3 KT [7-46]	5000	4700	3100	3100	2800	2300	3200	2900	1600*	800	4300	4500	4900	3400	2000	2300
	5300	5000	3500	3500	3200	2600	3600	3300	2000*	1000	4300	4500	4900	3400	2100	2300
	6000	5700	4100	4100	3900	3300	4100	3900	2600*	1200	4500	4700	5000	3600	2300	2600
	6700	6400	4800	4800	4600	4000	4900	4600	3300*	1200	4700	4900	5200	3900	2400	2800
10 KT [9-80]	8500	7600	5000	4800	4500	3700	4500	4000	1900*	1200	6200	7300	7700	6500	3000	3900
	8700	8100	5400	5300	5000	4100	5000	4500	2300*	1400	6200	7300	7700	6500	3000	3900
	9400	8800	6100	6000	5700	4800	5700	5200	3000*	1600	6300	7300	7600	6500	3300	4200
	10100	9500	6800	6700	6400	5500	6400	5900	3700*	1800	6500	7600	7900	6800	3600	4400
100 KT [11-218]	22100	20500	12900	11400	10500	7900	8800	7800	3400	2800	12500	16900	16900	16900	6000	8900
	22600	20900	13300	11800	10900	8300	9200	8300	3800	2800	12500	16900	16900	16900	6000	8900
	23300	21600	14000	12500	11600	9000	9900	9000	4500	3100	12500	16900	16900	16900	6000	8900
	24000	22300	14700	13200	12300	9700	10600	9700	5200	3300	12500	16900	16900	16900	7100	9100

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

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CHAPTER 8
COVERAGE AND SAFETY TABLES FOR
SURFACE BURST
EXPOSED PERSONNEL

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FREE FLIGHT ROCKET

5 KT
(8-59)

COVERAGE TABLE (Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE PERMANENT
SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	300	500	1000	1100	1300	1500	1900						
22000	.95/.97	.86/.94	.73/.88	.45/.50	.40/.42	.30/.32	.20/.22	.11/.13	709	709	461	246	0	0
24000	.92/.96	.83/.93	.70/.86	.44/.50	.40/.42	.30/.32	.20/.22	.11/.13	709	709	493	262	0	0
26000	.90/.96	.80/.92	.67/.85	.43/.49	.40/.42	.30/.32	.20/.22	.11/.13	709	709	523	276	0	0
28000	.87/.95	.76/.91	.64/.84	.42/.49	.38/.42	.30/.32	.20/.22	.11/.13	709	709	555	292	0	0
30000	.83/.94	.72/.90	.61/.82	.41/.48	.37/.41	.30/.32	.20/.22	.11/.13	709	709	586	306	0	0
32000	.78/.92	.68/.89	.57/.81	.41/.48	.36/.41	.30/.32	.20/.22	.11/.13	709	709	618	321	0	0
34000	.73/.91	.64/.87	.54/.79	.40/.47	.36/.41	.30/.32	.20/.22	.10/.13	709	709	649	336	0	0
36000	.67/.90	.60/.86	.51/.78	.38/.47	.35/.41	.29/.32	.20/.22	.10/.13	709	709	680	350	0	0
38000	.60/.88	.54/.84	.48/.76	.37/.46	.34/.40	.28/.32	.20/.22	.10/.12	709	709	712	366	0	0
40000	.53/.86	.50/.83	.45/.75	.35/.46	.33/.40	.27/.31	.20/.22	.10/.12	709	709	743	380	0	0
42000	.46/.85	.45/.81	.41/.73	.34/.45	.32/.40	.27/.31	.20/.22	.10/.12	709	709	775	396	0	0
44000	.40/.83	.39/.79	.39/.72	.33/.45	.31/.39	.26/.31	.20/.22	.10/.12	709	709	806	410	0	0
46000	.34/.81	.35/.77	.35/.70	.31/.44	.30/.39	.26/.31	.20/.22	.10/.12	709	709	839	426	0	0
48000	.28/.79	.30/.76	.33/.69	.30/.44	.29/.38	.25/.31	.20/.22	.10/.12	709	709	870	440	0	0
50000	.21/.78	.26/.74	.30/.67	.29/.43	.28/.38	.25/.30	.20/.22	.10/.12	709	709	902	455	0	0
52000	.17/.76	.23/.72	.27/.66	.28/.42	.27/.37	.24/.30	.20/.22	.10/.12	709	709	934	470	0	0
54000	.13/.74	.19/.70	.25/.64	.27/.42	.26/.37	.23/.30	.20/.22	.10/.12	709	709	966	485	0	0
56000	.10/.72	.17/.69	.22/.63	.26/.41	.25/.37	.22/.30	.20/.22	.10/.12	709	709	998	500	0	0
58000	.08/.71	.15/.68	.21/.62	.25/.41	.25/.36	.22/.30	.20/.22	.10/.12	709	709	1010	508	0	0
60000	.06/.70	.13/.67	.19/.61	.24/.40	.24/.36	.22/.29	.20/.22	.10/.12	709	709	1031	519	0	0

COVERAGE TABLE (Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE TRANSIENT
SURFACE BURST

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
RANGE	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	300	600	800	1200	1400	1600	2000	2400						
22000	.95/.97	.83/.92	.72/.84	.50/.55	.40/.42	.30/.32	.20/.23	.11/.13	886	886	461	246	0	0
24000	.95/.97	.81/.91	.70/.83	.48/.55	.40/.42	.30/.32	.20/.22	.11/.13	886	886	493	262	0	0
26000	.93/.96	.79/.91	.68/.82	.48/.55	.40/.42	.30/.32	.20/.22	.11/.13	886	886	523	276	0	0
28000	.92/.96	.77/.90	.66/.81	.47/.54	.40/.42	.30/.32	.20/.22	.11/.13	886	886	555	292	0	0
30000	.90/.95	.75/.89	.64/.79	.46/.54	.40/.42	.30/.32	.20/.22	.11/.13	886	886	586	306	0	0
32000	.88/.95	.72/.88	.62/.78	.46/.53	.40/.42	.30/.32	.20/.22	.11/.13	886	886	618	321	0	0
34000	.85/.94	.70/.87	.60/.77	.45/.53	.39/.42	.30/.32	.20/.22	.11/.13	886	886	649	336	0	0
36000	.83/.93	.67/.86	.58/.76	.45/.52	.38/.42	.30/.32	.20/.22	.11/.13	886	886	680	350	0	0
38000	.80/.92	.65/.84	.56/.75	.44/.52	.37/.41	.30/.32	.20/.22	.11/.13	886	886	712	366	0	0
40000	.76/.91	.62/.83	.54/.74	.43/.51	.37/.41	.30/.32	.20/.22	.11/.13	886	886	743	380	0	0
42000	.73/.90	.59/.82	.52/.73	.42/.51	.36/.41	.30/.32	.20/.22	.11/.13	886	886	775	396	0	0
44000	.69/.89	.57/.81	.50/.72	.41/.50	.35/.41	.30/.32	.20/.22	.11/.13	886	886	806	410	0	0
46000	.65/.88	.54/.80	.48/.71	.40/.50	.35/.40	.30/.32	.20/.22	.10/.13	886	886	839	426	0	0
48000	.61/.87	.51/.79	.46/.70	.39/.49	.34/.40	.30/.32	.20/.22	.10/.13	886	886	870	440	0	0
50000	.57/.86	.49/.77	.45/.69	.38/.49	.33/.40	.29/.32	.20/.22	.10/.12	886	886	902	455	0	0
52000	.53/.84	.46/.76	.43/.68	.36/.48	.32/.40	.28/.32	.20/.22	.10/.12	886	886	934	470	0	0
54000	.48/.83	.43/.75	.41/.67	.35/.48	.32/.39	.28/.31	.20/.22	.10/.12	886	886	966	485	0	0
56000	.43/.82	.41/.74	.39/.66	.34/.47	.31/.39	.27/.31	.20/.22	.10/.12	886	886	998	500	0	0
58000	.41/.81	.40/.73	.38/.65	.34/.47	.31/.39	.27/.31	.20/.22	.10/.12	886	886	1010	508	0	0
60000	.38/.80	.38/.72	.36/.64	.33/.47	.30/.39	.26/.31	.20/.22	.10/.12	886	886	1031	519	0	0

FREE FLIGHT ROCKET

COVERAGE TABLE (Distances in meters)

5 KT
(8-59)

EXPLOSED PERSONNEL - LATENT LETHALITY SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	600	800	1200	1700	1900	2100	2500	3200						
22000	.95/.97	.90/.95	.73/.80	.50/.52	.40/.42	.30/.33	.21/.23	.11/.13	1189	1189	461	246	0	0
24000	.95/.97	.90/.95	.72/.80	.50/.52	.40/.42	.30/.32	.21/.23	.11/.13	1189	1189	493	262	0	0
26000	.95/.97	.88/.94	.71/.79	.49/.52	.40/.42	.30/.32	.21/.23	.11/.13	1189	1189	523	276	0	0
28000	.93/.97	.87/.94	.70/.79	.48/.52	.40/.42	.30/.32	.21/.23	.11/.13	1189	1189	555	292	0	0
30000	.92/.96	.86/.93	.68/.78	.47/.51	.40/.42	.30/.32	.21/.23	.11/.13	1189	1189	586	306	0	0
32000	.91/.96	.85/.93	.67/.77	.47/.51	.40/.42	.30/.32	.21/.23	.11/.13	1189	1189	618	321	0	0
34000	.91/.96	.83/.92	.66/.77	.46/.51	.40/.42	.30/.32	.21/.23	.11/.13	1189	1189	649	336	0	0
36000	.90/.95	.81/.92	.65/.76	.46/.51	.40/.42	.30/.32	.20/.23	.11/.13	1189	1189	680	350	0	0
38000	.88/.95	.80/.91	.64/.75	.46/.51	.40/.42	.30/.32	.20/.23	.11/.13	1189	1189	712	366	0	0
40000	.86/.94	.78/.90	.62/.75	.45/.50	.40/.42	.30/.32	.20/.22	.11/.13	1189	1189	743	380	0	0
42000	.85/.94	.76/.90	.61/.74	.45/.50	.40/.42	.30/.32	.20/.22	.11/.13	1189	1189	775	396	0	0
44000	.83/.93	.75/.89	.60/.73	.44/.50	.40/.42	.30/.32	.20/.22	.11/.13	1189	1189	806	410	0	0
46000	.81/.93	.73/.88	.58/.73	.44/.50	.39/.42	.30/.32	.20/.22	.11/.13	1189	1189	839	426	0	0
48000	.80/.92	.71/.87	.57/.72	.43/.49	.39/.42	.30/.32	.20/.22	.11/.13	1189	1189	870	440	0	0
50000	.77/.91	.69/.87	.56/.71	.42/.49	.38/.42	.30/.32	.20/.22	.11/.13	1189	1189	902	455	0	0
52000	.75/.91	.67/.86	.55/.71	.42/.49	.37/.41	.30/.32	.20/.22	.11/.13	1189	1189	934	470	0	0
54000	.73/.90	.66/.85	.53/.70	.42/.48	.37/.41	.30/.32	.20/.22	.11/.13	1189	1189	966	485	0	0
56000	.71/.89	.64/.84	.52/.69	.41/.48	.36/.41	.30/.32	.20/.22	.11/.13	1189	1189	998	500	0	0
58000	.70/.89	.62/.84	.51/.69	.41/.48	.36/.41	.30/.32	.20/.22	.11/.13	1189	1189	1010	508	0	0
60000	.68/.88	.61/.83	.50/.68	.41/.48	.36/.41	.30/.32	.20/.22	.11/.13	1189	1189	1031	519	0	0

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPLOSED			WARNED EXPLOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT	FOREST CARGO HEL	BLowDOWN DECID CONIF	WILDLAND FIRES CLASS I	CLASS IV
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	HEL		
22000	6000	5700	4000	3900	3700	3000	3200	2900	2100	1000	3500	5600	6000	4500	1400	4000	2600
24000	6100	5700	4000	4000	3700	3100	3200	3000	2200	1000	3500	5600	6000	4500	1400	4000	2600
26000	6200	5800	4100	4100	3800	3100	3300	3000	2200	1000	3500	5600	6000	4500	1400	4000	2600
28000	6200	5900	4200	4100	3900	3200	3400	3100	2300	1000	3600	5600	6000	4500	1400	4000	2700
30000	6300	5900	4200	4200	3900	3300	3400	3100	2300	1000	3600	5600	6000	4500	1400	4000	2700
32000	6300	6000	4300	4200	4000	3300	3500	3200	2400	1000	3600	5600	6000	4500	1500	4100	2700
34000	6400	6100	4300	4300	4100	3400	3600	3300	2500	1000	3600	5600	6000	4500	1500	4100	2700
36000	6500	6100	4400	4400	4100	3500	3600	3300	2500	1000	3600	5600	6000	4500	1500	4100	2700
38000	6500	6200	4500	4400	4200	3500	3700	3400	2600	1100	3600	5600	5900	4500	1600	4100	2700
40000	6600	6300	4500	4500	4200	3600	3700	3500	2700	1100	3700	5600	6000	4500	1600	4100	2800
42000	6700	6300	4600	4600	4300	3600	3800	3500	2700	1100	3700	5600	6000	4600	1600	4200	2800
44000	6700	6400	4700	4600	4400	3700	3900	3600	2800	1100	3700	5700	6000	4600	1600	4200	2800
46000	6800	6400	4700	4700	4400	3800	3900	3700	2800	1100	3700	5700	6000	4600	1600	4200	2800
48000	6800	6500	4800	4700	4500	3800	4000	3700	2900	1100	3700	5700	6100	4600	1600	4200	2800
50000	6900	6600	4800	4800	4600	3900	4100	3800	3000	1100	3700	5700	6100	4600	1600	4200	2800
52000	7000	6600	4900	4900	4600	4000	4100	3800	3000	1100	3700	5800	6100	4600	1700	4200	2900
54000	7000	6700	5000	4900	4700	4000	4200	3900	3100	1100	3800	5800	6100	4700	1700	4300	2900
56000	7100	6800	5000	5000	4700	4100	4300	4000	3200	1100	3800	5800	6100	4700	1700	4300	2900
58000	7100	6800	5000	5000	4800	4100	4300	4000	3200	1100	3800	5800	6100	4700	1700	4300	2900
60000	7200	6800	5100	5100	4800	4100	4300	4000	3200	1100	3800	5800	6200	4700	1700	4300	2900

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii

A FALLOUT PREDICTION SHOULD BE MADE

FREE FLIGHT ROCKET

20 KT

(9-105)

COVERAGE TABLE

(Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE PERMANENT
SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	200	600	700	1200	1300	1500	1800	2300						
22000	.95/.97	.80/.90	.74/.85	.46/.51	.40/.42	.30/.32	.20/.23	.11/.13	839	839	461	246	0	0
24000	.95/.97	.77/.89	.71/.84	.46/.50	.40/.42	.30/.32	.20/.22	.11/.13	839	839	493	262	0	0
26000	.95/.97	.75/.88	.69/.83	.45/.50	.40/.42	.30/.32	.20/.22	.11/.13	839	839	523	276	0	0
28000	.92/.96	.73/.87	.67/.82	.44/.50	.40/.42	.30/.32	.20/.22	.11/.13	839	839	555	292	0	0
30000	.91/.96	.70/.86	.64/.81	.43/.49	.40/.42	.30/.32	.20/.22	.11/.13	839	839	586	306	0	0
32000	.88/.95	.67/.85	.62/.80	.42/.49	.40/.42	.30/.32	.20/.22	.11/.13	839	839	618	321	0	0
34000	.86/.94	.65/.84	.60/.79	.42/.49	.39/.42	.30/.32	.20/.22	.11/.13	839	839	649	336	0	0
36000	.83/.93	.62/.83	.58/.78	.41/.48	.38/.42	.30/.32	.20/.22	.11/.13	839	839	680	350	0	0
38000	.79/.92	.60/.81	.56/.77	.41/.48	.37/.41	.30/.32	.20/.22	.11/.13	839	839	712	366	0	0
40000	.75/.91	.57/.80	.53/.76	.40/.47	.36/.41	.30/.32	.20/.22	.11/.13	839	839	743	380	0	0
42000	.71/.90	.54/.79	.51/.74	.40/.47	.36/.41	.30/.32	.20/.22	.10/.13	839	839	775	396	0	0
44000	.66/.89	.52/.78	.49/.73	.38/.47	.35/.41	.30/.32	.20/.22	.10/.13	839	839	806	410	0	0
46000	.61/.88	.49/.76	.46/.72	.37/.46	.34/.40	.30/.32	.20/.22	.10/.13	839	839	839	426	0	0
48000	.56/.86	.46/.75	.44/.71	.36/.46	.33/.40	.29/.32	.20/.22	.10/.12	839	839	870	440	0	0
50000	.51/.85	.43/.74	.42/.70	.34/.45	.32/.40	.28/.32	.20/.22	.10/.12	839	839	902	455	0	0
52000	.45/.84	.41/.73	.40/.68	.33/.45	.32/.39	.28/.31	.20/.22	.10/.12	839	839	934	470	0	0
54000	.39/.82	.38/.71	.38/.67	.32/.44	.31/.39	.27/.31	.20/.22	.10/.12	839	839	966	485	0	0
56000	.35/.81	.36/.70	.36/.66	.31/.44	.30/.39	.26/.31	.20/.22	.10/.12	839	839	998	500	0	0
58000	.33/.80	.35/.69	.34/.65	.31/.43	.30/.39	.26/.31	.20/.22	.10/.12	839	839	1010	508	0	0
60000	.32/.79	.33/.68	.33/.64	.30/.43	.29/.38	.26/.31	.20/.22	.10/.12	839	839	1031	519	0	0

COVERAGE TABLE

(Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE TRANSIENT
SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	500	800	1000	1400	1600	1800	2200	2400						
22000	.95/.97	.83/.90	.72/.81	.52/.56	.40/.42	.30/.32	.21/.23	.11/.13	1030	1030	461	246	0	0
24000	.93/.97	.81/.90	.71/.80	.51/.56	.40/.42	.30/.32	.21/.23	.11/.13	1030	1030	493	262	0	0
26000	.92/.96	.80/.89	.70/.80	.50/.56	.40/.42	.30/.32	.21/.23	.11/.13	1030	1030	523	276	0	0
28000	.91/.96	.78/.88	.68/.79	.49/.55	.40/.42	.30/.32	.21/.23	.11/.13	1030	1030	555	292	0	0
30000	.90/.95	.76/.88	.66/.78	.48/.55	.40/.42	.30/.32	.20/.23	.11/.13	1030	1030	586	306	0	0
32000	.88/.95	.75/.87	.65/.77	.47/.55	.40/.42	.30/.32	.20/.23	.11/.13	1030	1030	618	321	0	0
34000	.86/.94	.73/.86	.63/.76	.47/.54	.40/.42	.30/.32	.20/.22	.11/.13	1030	1030	649	336	0	0
36000	.85/.94	.71/.85	.62/.76	.46/.54	.40/.42	.30/.32	.20/.22	.11/.13	1030	1030	680	350	0	0
38000	.83/.93	.69/.84	.60/.75	.46/.53	.40/.42	.30/.32	.20/.22	.11/.13	1030	1030	712	366	0	0
40000	.81/.92	.67/.83	.59/.74	.46/.53	.40/.42	.30/.32	.20/.22	.11/.13	1030	1030	743	380	0	0
42000	.78/.92	.65/.82	.57/.73	.45/.53	.40/.42	.30/.32	.20/.22	.11/.13	1030	1030	775	396	0	0
44000	.76/.91	.63/.82	.56/.72	.45/.52	.39/.42	.30/.32	.20/.22	.11/.13	1030	1030	806	410	0	0
46000	.73/.90	.61/.81	.54/.72	.43/.52	.38/.42	.30/.32	.20/.22	.11/.13	1030	1030	839	426	0	0
48000	.71/.89	.59/.80	.52/.71	.43/.51	.37/.41	.30/.32	.20/.22	.11/.13	1030	1030	870	440	0	0
50000	.68/.88	.57/.79	.51/.70	.42/.51	.37/.41	.30/.32	.20/.22	.11/.13	1030	1030	902	455	0	0
52000	.65/.87	.55/.78	.49/.69	.41/.51	.36/.41	.30/.32	.20/.22	.11/.13	1030	1030	934	470	0	0
54000	.62/.86	.53/.77	.48/.68	.41/.50	.36/.41	.30/.32	.20/.22	.10/.13	1030	1030	966	485	0	0
56000	.59/.85	.51/.76	.46/.67	.40/.50	.35/.41	.30/.32	.20/.22	.10/.13	1030	1030	998	500	0	0
58000	.57/.85	.50/.75	.46/.67	.39/.49	.35/.41	.30/.32	.20/.22	.10/.13	1030	1030	1010	508	0	0
60000	.55/.84	.48/.74	.45/.66	.38/.49	.34/.40	.30/.32	.20/.22	.10/.13	1030	1030	1031	519	0	0

FREE FLIGHT ROCKET

20 KT

(9-105)

COVERAGE TABLE

(Distances in meters)

EXPOSED PERSONNEL - LATENT LETHALITY
SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	600	1200	1400	1900	2100	2400	2800	3300						
22000	.95/.97	.82/.89	.74/.80	.50/.52	.40/.42	.31/.33	.21/.23	.16/.18	1354	1354	461	246	0	0
24000	.95/.97	.81/.89	.73/.79	.50/.52	.40/.42	.30/.33	.21/.23	.16/.18	1354	1354	493	262	0	0
26000	.95/.97	.81/.88	.72/.79	.50/.52	.40/.42	.30/.33	.21/.23	.16/.18	1354	1354	523	276	0	0
28000	.95/.97	.80/.88	.71/.78	.50/.52	.40/.42	.30/.32	.21/.23	.16/.18	1354	1354	555	292	0	0
30000	.95/.97	.78/.87	.70/.78	.50/.52	.40/.42	.30/.32	.21/.23	.16/.18	1354	1354	586	306	0	0
32000	.95/.97	.77/.87	.69/.77	.50/.52	.40/.42	.30/.32	.21/.23	.16/.18	1354	1354	618	321	0	0
34000	.95/.97	.76/.86	.68/.77	.49/.52	.40/.42	.30/.32	.21/.23	.16/.18	1354	1354	649	336	0	0
36000	.95/.97	.75/.85	.67/.76	.48/.52	.40/.42	.30/.32	.21/.23	.16/.18	1354	1354	680	350	0	0
38000	.94/.96	.74/.85	.66/.76	.48/.52	.40/.42	.30/.32	.21/.23	.16/.18	1354	1354	712	366	0	0
40000	.93/.96	.72/.84	.65/.75	.47/.51	.40/.42	.30/.32	.21/.23	.16/.18	1354	1354	743	380	0	0
42000	.92/.96	.71/.83	.64/.75	.47/.51	.40/.42	.30/.32	.20/.23	.16/.18	1354	1354	775	396	0	0
44000	.91/.96	.70/.83	.63/.74	.47/.51	.40/.42	.30/.32	.20/.23	.16/.18	1354	1354	806	410	0	0
46000	.90/.95	.68/.82	.62/.73	.46/.51	.40/.42	.30/.32	.20/.23	.16/.18	1354	1354	839	426	0	0
48000	.88/.95	.67/.82	.61/.73	.46/.51	.40/.42	.30/.32	.20/.22	.16/.18	1354	1354	870	440	0	0
50000	.87/.95	.66/.81	.60/.72	.46/.51	.40/.42	.30/.32	.20/.22	.16/.18	1354	1354	902	455	0	0
52000	.86/.94	.65/.80	.58/.72	.45/.50	.40/.42	.30/.32	.20/.22	.16/.18	1354	1354	934	470	0	0
54000	.84/.94	.63/.79	.57/.71	.45/.50	.40/.42	.30/.32	.20/.22	.15/.18	1354	1354	966	485	0	0
56000	.82/.93	.62/.79	.56/.71	.44/.50	.40/.42	.30/.32	.20/.22	.15/.18	1354	1354	998	500	0	0
58000	.82/.93	.61/.78	.56/.70	.44/.50	.40/.42	.30/.32	.20/.22	.15/.18	1354	1354	1010	508	0	0
60000	.80/.92	.60/.78	.55/.70	.44/.50	.40/.42	.30/.32	.20/.22	.15/.18	1354	1354	1031	519	0	0

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED BRG	LT DAM TO BLDG	LT OBSN UTIL HEL	LT ACFT IN FLIGHT			FOREST		WILDLAND FIRES	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER				OV-1B	ASLT	CARGO	BLOWDOWN	DECID CONIF	CLASS I	CLASS IV
22000	10500	9700	6200	5900	5600	4600	4400	4000	2200	1300	5400	9000	9300	8700	2600	2200		6700	4500
24000	10600	9800	6300	6000	5600	4700	4500	4100	2300	1400	5400	9000	9300	8700	2600	2200		6700	4500
26000	10700	9800	6400	6100	5700	4700	4500	4100	2400	1400	5400	9000	9300	8700	2600	2200		6700	4500
28000	10700	9900	6400	6100	5800	4800	4600	4200	2400	1400	5400	9000	9300	8700	2600	2200		6700	4500
30000	10800	9900	6500	6200	5800	4900	4700	4200	2500	1400	5400	9000	9300	8700	2600	2300		6700	4500
32000	10900	10000	6500	6200	5900	4900	4700	4300	2500	1400	5400	9000	9300	8700	2600	2300		6700	4500
34000	10900	10100	6600	6300	5900	5000	4800	4400	2600	1400	5400	9000	9300	8700	2600	2300		6700	4500
36000	11000	10100	6700	6400	6000	5100	4900	4400	2700	1500	5300	9000	9300	8700	2600	2300		6700	4500
38000	11000	10200	6700	6400	6100	5100	4900	4500	2700	1500	5400	9000	9300	8700	2600	2300		6700	4600
40000	11100	10200	6800	6500	6100	5200	5000	4500	2800	1500	5400	9000	9300	8700	2600	2400		6700	4600
42000	11200	10300	6800	6600	6200	5200	5000	4600	2800	1500	5400	9000	9300	8700	2600	2400		6700	4600
44000	11200	10400	6900	6600	6300	5300	5100	4700	2900	1500	5400	9000	9300	8700	2600	2400		6700	4600
46000	11300	10400	7000	6700	6300	5400	5200	4700	3000	1500	5500	9000	9300	8700	2600	2400		6700	4700
48000	11300	10500	7000	6700	6400	5400	5200	4800	3000	1600	5500	9000	9300	8700	2600	2400		6700	4700
50000	11400	10600	7100	6800	6400	5500	5300	4900	3100	1600	5500	9000	9300	8700	2600	2400		6700	4700
52000	11500	10600	7200	6900	6500	5500	5300	4900	3200	1600	5500	9000	9300	8700	2600	2500		6700	4700
54000	11500	10700	7200	6900	6600	5600	5400	5000	3200	1600	5500	9000	9300	8700	2600	2500		6700	4700
56000	11600	10700	7300	7000	6600	5700	5500	5000	3300	1600	5600	9000	9300	8700	2600	2500		6700	4700
58000	11600	10800	7300	7000	6600	5700	5500	5100	3300	1600	5600	9000	9300	8700	2600	2500		6700	4800
60000	11600	10800	7300	7000	6700	5700	5500	5100	3300	1600	5600	9000	9300	8700	2600	2500		6700	4800

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

A FALLOUT PREDICTION SHOULD BE MADE

GUIDED MISSILE
10 KT
(9-80)

COVERAGE TABLE
 (Distances in meters)

E X P O S E D P E R S O N N E L - I M M E D I A T E P E R M A N E N T
 S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	500	750	1000	1200	1500	1800	2600						
50-150 Km	.27/.80	.33/.71	.33/.61	.31/.50	.30/.41	.25/.31	.20/.22	.10/.12	806	806	911	500	0	C

COVERAGE TABLE
 (Distances in meters)

E X P O S E D P E R S O N N E L - I M M E D I A T E T R A N S I E N T
 S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	500	1000	1300	1600	1800	2200	3200						
50-150 Km	.65/.39	.55/.84	.44/.65	.39/.52	.33/.40	.30/.32	.20/.22	.10/.12	997	997	911	500	0	3

GUIDED MISSILE
10 KT
(9-80)

COVERAGE TABLE
(Distances in meters)

EXPOSED PERSONNEL - LATENT LETHALITY
SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	300	600	900	1850	2100	2400	3000	3900						
50-150 Km	.90/.95	.81/.92	.70/.87	.44/.50	.39/.42	.30/.32	.20/.22	.11/.13	1322	1322	911	500	0	0

SAFETY DISTANCE TABLE
(Distances in meters)

T R O O P S A F E T Y (M S D)										----- P R E C L U D E (L S D) -----									
RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD FIXED	LT DAM	LT DAM	ACFT UTIL	IN FLIGHT OV-1B	FOREST BLOWDOWN	WILDLAND FIRES	CLASS I	CLASS IV	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	DECID	CONIF			
50-150 Km	8600	8100	5700	5600	5300	4500	4500	4100	2800	1400	4700	7300	7600	6500	2400	2000	5500	3900	

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

A FALLOUT PREDICTION SHOULD BE MADE

GUIDED MISSILE

50 KT
(11-159)

COVERAGE TABLE
(Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE PERMANENT
SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	600	1100	1300	1500	1800	2200	3100						
50-150 Km	.63/.39	.51/.80	.42/.60	.38/.50	.35/.43	.29/.32	.20/.22	.10/.12	984	984	911	500	0	3

COVERAGE TABLE
(Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE TRANSIENT
SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
50-150 Km	100	350	600	1600	1900	2200	2700	3500	1191	1191	911	500	0	0

GUIDED MISSILE

50 KT

(11-159)

COVERAGE TABLE

(Distances in meters)

EXPOSED PERSONNEL - LATENT LETHALITY

SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	500	900	1200	2200	2400	2800	3200	4200						
50-150 Km	.92/.96	.82/.93	.72/.86	.45/.50	.40/.42	.30/.32	.20/.22	.11/.13	1536	1536	911	500	0	3

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT ASLT HEL	OV-1B CARGO HEL	FOREST BLOWDOWN DECID CONIF	WILDLAND FIRES CLASS CLASS I IV		
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL				
50-150 Km	16900	15600	9900	9100	8500	6900	6400	5800	3300	2000	7400	12700	12900	12700	4300	3500	10000	6500

A FALLOUT PREDICTIDN SHOULD BE MADE

GUIDED MISSILE
100 KT
(11-218)

COVERAGE TABLE
(Distances in meters)

E X P O S E D P E R S O N N E L - I M M E D I A T E P E R M A N E N T
S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	500	800	1700	2000	2300	2900	4000						
50-150 Km	.91/.96	.81/.93	.70/.88	.45/.53	.38/.42	.30/.32	.20/.22	.11/.13	1272	1272	911	500	0	3

COVERAGE TABLE
(Distances in meters)

E X P O S E D P E R S O N N E L - I M M E D I A T E T R A N S I E N T
S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	300	600	900	1900	2100	2500	3000	4100						
50-150 Km	.91/.96	.82/.93	.71/.87	.44/.50	.40/.42	.30/.32	.20/.22	.11/.13	1348	1348	911	500	0	3

GUIDED MISSILE

100 KT

(11-218)

COVERAGE TABLE

(Distances in meters)

EXPOSED PERSONNEL - LATENT LETHALITY

SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	800	1200	1500	2400	2700	3200	3800	5100						
50-150 Km	.91/.96	.81/.91	.72/.84	.47/.51	.40/.42	.30/.32	.20/.23	.11/.13	1719	1719	911	500	0	3

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD)										----- PRECLUDE (LSD) -----									
UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED BRG	LT DAM TO BLDG	LT ACFT OBSN UTIL HEL	IN FLIGHT OV-1B ASLT HEL	CARGO HEL	FOREST BLOWDOWN DECID	CONIF	WILDLAND FIRES CLASS I	CLASS IV		
RANGE	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER										
50-150 Km	23300	21600	14000	12500	11600	9000	8000	7200	3900	2600	9700	16900	16900	16900	3500	4600	14500 9000		

A FALLOUT PREDICTION SHOULD BE MADE

MARK 50 BOMB

COVERAGE TABLE
(Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE PERMANENT
SURFACE BURST

		EFFECTIVENESS								PROB		ACCURACY DATA			
YIELD		RADIUS OF TARGET								MIN	EXPT				
		400	600	700	900	1000	1100	1300	1700	RD	RD	CD/90	CEP	HOB	PEH
3 KT [7-46]		.95/.97	.80/.85	.71/.76	.50/.52	.40/.42	.31/.33	.21/.23	.11/.13	628	628	182	100	0	0
		.68/.87	.56/.73	.51/.65	.42/.49	.37/.41	.30/.32	.20/.22	.11/.13	628	628	455	250	0	0
		.11/.58	.17/.50	.19/.46	.21/.38	.21/.34	.21/.29	.20/.22	.10/.12	628	628	911	500	0	0
		.00/.36	.02/.33	.02/.31	.04/.28	.05/.26	.07/.23	.09/.19	.10/.12	628	628	1366	750	0	0
10 KT [9-80]		.95/.97	.81/.85	.70/.72	.50/.52	.41/.43	.31/.33	.16/.18	.11/.13	806	806	182	100	0	0
		.79/.90	.64/.76	.56/.66	.46/.51	.40/.42	.30/.32	.16/.18	.11/.13	806	806	455	250	0	0
		.33/.69	.33/.59	.32/.52	.30/.43	.28/.38	.25/.31	.15/.17	.10/.12	806	806	911	500	0	0
		.04/.48	.08/.43	.11/.39	.14/.34	.15/.31	.16/.26	.15/.17	.10/.12	806	806	1366	750	0	0
100 KT [11-218]		.95/.97	.80/.82	.70/.72	.51/.53	.41/.43	.31/.33	.21/.23	.11/.13	1272	1272	182	100	0	0
		.90/.95	.73/.79	.65/.70	.50/.52	.40/.42	.31/.33	.21/.23	.11/.13	1272	1272	455	250	0	0
		.66/.85	.54/.70	.50/.62	.43/.49	.38/.42	.30/.32	.20/.22	.11/.13	1272	1272	911	500	0	0
		.37/.71	.35/.59	.34/.53	.32/.44	.30/.39	.28/.31	.20/.22	.10/.12	1272	1272	1366	750	0	0

COVERAGE TABLE
(Distances in meters)

EXPOSED PERSONNEL - IMMEDIATE TRANSIENT
SURFACE BURST

		EFFECTIVENESS								PROB	ACCURACY DATA				
YIELD	RADIUS OF TARGET								MIN	EXPT	CD/90	CEP	HOB	PEH	
	500	750	900	1100	1250	1400	1700	2100	RD	RD					
3 KT [7-46]	.95/.97	.83/.87	.70/.72	.50/.52	.41/.43	.31/.33	.21/.23	.11/.13	789	789	182	100	0	0	
	.81/.92	.65/.78	.57/.67	.46/.51	.40/.42	.30/.32	.20/.22	.11/.13	789	789	455	250	0	0	
	.31/.70	.31/.59	.31/.53	.30/.44	.28/.38	.25/.31	.20/.22	.10/.12	789	789	911	500	0	0	
	.03/.48	.07/.43	.09/.39	.13/.34	.14/.31	.15/.27	.15/.21	.10/.12	789	789	1366	750	0	0	
10 KT [9-80]	.95/.97	.81/.86	.70/.72	.46/.48	.41/.43	.31/.33	.21/.23	.11/.13	997	997	182	100	0	0	
	.86/.93	.70/.79	.62/.69	.45/.47	.40/.42	.30/.32	.21/.23	.11/.13	997	997	455	250	0	0	
	.50/.77	.44/.65	.42/.58	.37/.44	.33/.40	.28/.32	.20/.22	.10/.13	997	997	911	500	0	0	
	.17/.59	.21/.51	.22/.47	.23/.38	.23/.35	.21/.29	.19/.22	.10/.12	997	997	1366	750	0	0	
100 KT [11-218]	.95/.97	.80/.82	.70/.72	.51/.53	.41/.43	.31/.33	.21/.23	.11/.13	1348	1348	182	100	0	0	
	.90/.94	.73/.79	.67/.71	.50/.52	.40/.42	.31/.33	.21/.23	.11/.13	1348	1348	455	250	0	0	
	.68/.85	.56/.70	.52/.64	.44/.50	.40/.42	.30/.32	.20/.22	.11/.13	1348	1348	911	500	0	0	
	.41/.72	.39/.60	.37/.56	.34/.45	.32/.39	.28/.32	.20/.22	.10/.12	1348	1348	1366	750	0	0	

MARK 50 BOMB

COVERAGE TABLE
(Distances in meters)

EXPOSED PERSONNEL - LATENT LETHALITY
SURFACE BURST

YIELD	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
3 KT [7-46]	500	1100	1250	1500	1700	1900	2200	2900						
	.95/.97	.80/.82	.70/.72	.50/.52	.41/.43	.31/.33	.21/.23	.11/.13	1067	1067	182	100	n	0
	.95/.97	.70/.78	.62/.69	.50/.52	.40/.42	.30/.32	.21/.23	.11/.13	1067	1067	455	250	n	0
	.63/.87	.47/.65	.44/.59	.40/.48	.35/.41	.30/.32	.20/.22	.10/.13	1067	1067	911	500	n	0
	.18/.68	.26/.53	.26/.49	.26/.41	.25/.36	.23/.30	.20/.22	.10/.12	1067	1067	1366	750	n	0
10 KT [9-80]	1000	1400	1550	1900	2100	2400	2800	3400						
	.95/.97	.80/.82	.70/.72	.51/.53	.41/.43	.31/.33	.21/.23	.16/.18	1322	1322	182	100	n	0
	.89/.93	.72/.79	.66/.71	.50/.52	.40/.42	.30/.33	.21/.23	.16/.18	1322	1322	455	250	n	0
	.66/.84	.55/.69	.51/.63	.42/.49	.39/.42	.30/.32	.20/.22	.15/.17	1322	1322	911	500	n	0
	.40/.71	.37/.59	.36/.55	.33/.44	.31/.39	.27/.31	.20/.22	.15/.17	1322	1322	1366	750	n	0
100 KT [11-218]	1300	1800	2000	2400	2700	3000	3600	4400						
	.95/.97	.80/.82	.70/.72	.51/.53	.41/.43	.31/.33	.21/.23	.16/.18	1719	1719	182	100	n	0
	.91/.95	.76/.81	.70/.72	.50/.52	.40/.43	.31/.33	.21/.23	.16/.18	1719	1719	455	250	n	0
	.78/.89	.63/.74	.58/.67	.47/.51	.40/.42	.30/.32	.20/.23	.16/.18	1719	1719	911	500	n	0
	.58/.80	.49/.67	.47/.61	.41/.49	.37/.41	.30/.32	.20/.22	.15/.17	1719	1719	1366	750	n	0

SAFETY DISTANCE TABLE
(Distances in meters)

T R O O P S A F E T Y (M S D)										----- P R E C L U D E (L S D) -----									
YIELD	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT	FOREST BLOWDOWN DECID	CONIF	WILDLAND FIRES CLASS CLASS			
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	HEL	I	IV		
3 KT [7-46]	4400	4100	2600	2700	2500	1900	2200	2000	1400*	700	2800	4500	4900	3400	1400	1000	3100	1900	
	4800	4500	3000	3000	2800	2300	2600	2400	1800*	800	2900	4500	4900	3400	1500	1200	3100	2000	
	5400	5100	3700	3700	3500	3000	3200	3000	2500*	900	3100	4700	5000	3600	1800	1400	3300	2200	
	6100	5800	4300	4400	4200	3600	3900	3700	3100*	900	3400	4900	5200	3900	1900	1500	3500	2400	
10 KT [9-80]	7500	7000	4600	4500	4200	3400	3300	3000	1700*	1100	4500	7300	7700	6500	2200	1600	5400	3600	
	7900	7400	5000	4900	4600	3800	3700	3400	2100*	1200	4500	7300	7700	6500	2300	1800	5400	3500	
	8600	8100	5700	5600	5300	4500	4500	4100	2800*	1400	4700	7300	7600	6500	2400	2000	5500	3800	
	9400	8800	6400	6300	6000	5200	5200	4800	3500*	1600	4900	7600	7900	6800	2600	2200	5700	4100	
100 KT [11-218]	22100	20500	12900	11400	10500	7900	6800	6100	2800	2300	9700	16900	16900	16900	5400	4400	14500	9000	
	22600	20900	13300	11800	10900	8300	7300	6500	3200	2400	9700	16900	16900	16900	5400	4400	14500	9000	
	23300	21600	14000	12500	11600	9000	8000	7200	3900	2600	9700	16900	16900	16900	5500	4600	14500	9000	
	24000	22300	14700	13200	12300	9700	8700	7900	4600	2900	9800	16900	16900	16900	5600	4800	14500	9100	

*Nuclear radiation effects are significant. If troops have history of previous exposure, Consult Figure 15-8 for modification of risk radii.

A FALLOUT PREDICTION SHOULD BE MADE

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CHAPTER 9
COVERAGE AND SAFETY TABLES FOR
SURFACE BURST
PERSONNEL IN OPEN FOXHOLES

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FREE FLIGHT ROCKET

5 KT
(8-59)

COVERAGE TABLE (Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE PERMANENT
SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	25	200	400	600	800	900	1100	1400						
22000	.69/.90	.61/.86	.49/.74	.41/.57	.34/.40	.30/.32	.20/.22	.10/.13	501	501	461	246	0	0
24000	.59/.88	.53/.84	.45/.72	.39/.55	.32/.40	.29/.32	.20/.22	.10/.12	501	501	493	262	0	0
26000	.49/.86	.47/.82	.41/.70	.37/.54	.31/.39	.28/.32	.20/.22	.10/.12	501	501	523	276	0	0
28000	.36/.83	.39/.79	.37/.68	.35/.53	.30/.39	.27/.31	.20/.22	.10/.12	501	501	555	292	0	0
30000	.29/.81	.32/.77	.34/.66	.32/.52	.29/.38	.26/.31	.20/.22	.10/.12	501	501	586	306	0	0
32000	.20/.78	.26/.74	.31/.64	.30/.50	.27/.37	.25/.31	.20/.22	.10/.12	501	501	618	321	0	0
34000	.14/.76	.21/.72	.27/.62	.28/.49	.26/.37	.24/.30	.20/.22	.10/.12	501	501	649	336	0	0
36000	.10/.73	.17/.70	.24/.60	.26/.48	.25/.36	.23/.30	.20/.22	.10/.12	501	501	680	350	0	0
38000	.06/.70	.12/.67	.21/.58	.24/.47	.24/.36	.22/.30	.20/.22	.10/.12	501	501	712	366	0	0
40000	.04/.68	.08/.65	.18/.57	.22/.45	.22/.35	.21/.29	.20/.22	.10/.12	501	501	743	380	0	0
42000	.03/.65	.06/.62	.15/.55	.20/.44	.21/.34	.21/.29	.19/.22	.10/.12	501	501	775	396	0	0
44000	.02/.63	.04/.60	.12/.53	.18/.43	.20/.34	.20/.28	.18/.22	.10/.12	501	501	806	410	0	0
46000	.02/.60	.04/.58	.10/.51	.16/.42	.18/.33	.19/.28	.17/.21	.10/.12	501	501	839	426	0	0
48000	.01/.58	.03/.56	.08/.49	.15/.41	.17/.32	.17/.28	.17/.21	.10/.12	501	501	870	440	0	0
50000	.00/.56	.02/.54	.06/.48	.13/.40	.16/.32	.16/.27	.16/.21	.10/.12	501	501	902	455	0	0
52000	.00/.54	.02/.52	.05/.46	.11/.39	.15/.31	.16/.27	.16/.21	.10/.12	501	501	934	470	0	0
54000	.00/.52	.02/.50	.04/.45	.09/.37	.13/.30	.15/.26	.15/.21	.10/.12	501	501	966	485	0	0
56000	.00/.50	.01/.48	.03/.43	.08/.36	.12/.30	.13/.26	.14/.20	.10/.12	501	501	998	500	0	0
58000	.00/.49	.01/.47	.03/.42	.07/.36	.12/.29	.13/.26	.14/.20	.10/.12	501	501	1010	508	0	0
60000	.00/.47	.01/.46	.03/.41	.06/.35	.11/.29	.12/.25	.13/.20	.10/.12	501	501	1031	519	0	0

COVERAGE TABLE (Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE TRANSIENT
SURFACE BURST

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
RANGE	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	200	400	900	1000	1200	1400	1800						
22000	.92/.96	.87/.95	.73/.89	.45/.53	.41/.45	.30/.32	.20/.22	.11/.13	656	656	461	246	0	0
24000	.89/.95	.84/.93	.70/.88	.44/.52	.40/.45	.30/.32	.20/.22	.11/.13	656	656	493	262	0	0
26000	.85/.94	.80/.92	.66/.86	.43/.51	.39/.45	.30/.32	.20/.22	.11/.13	656	656	523	276	0	0
28000	.80/.93	.75/.91	.62/.85	.42/.51	.38/.44	.30/.32	.20/.22	.11/.13	656	656	555	292	0	0
30000	.74/.91	.70/.90	.58/.83	.41/.50	.37/.44	.30/.32	.20/.22	.11/.13	656	656	586	306	0	0
32000	.68/.90	.63/.88	.54/.82	.39/.49	.36/.43	.30/.32	.20/.22	.10/.13	656	656	618	321	0	0
34000	.61/.88	.58/.86	.50/.80	.38/.49	.34/.43	.28/.32	.20/.22	.10/.13	656	656	649	336	0	0
36000	.54/.87	.52/.85	.46/.78	.36/.48	.33/.42	.28/.32	.20/.22	.10/.12	656	656	680	350	0	0
38000	.46/.85	.46/.83	.43/.76	.34/.47	.32/.42	.27/.31	.20/.22	.10/.12	656	656	712	366	0	0
40000	.39/.83	.39/.81	.39/.75	.33/.47	.31/.41	.26/.31	.20/.22	.10/.12	656	656	743	380	0	0
42000	.33/.81	.34/.79	.35/.73	.32/.46	.30/.41	.26/.31	.20/.22	.10/.12	656	656	775	396	0	0
44000	.26/.79	.30/.77	.32/.71	.30/.45	.29/.40	.25/.31	.20/.22	.10/.12	656	656	806	410	0	0
46000	.20/.77	.23/.75	.28/.69	.29/.44	.28/.40	.24/.30	.20/.22	.10/.12	656	656	839	426	0	0
48000	.15/.75	.19/.73	.25/.68	.28/.44	.27/.39	.24/.30	.20/.22	.10/.12	656	656	870	440	0	0
50000	.11/.73	.14/.71	.22/.66	.26/.43	.26/.38	.23/.30	.20/.22	.10/.12	656	656	902	455	0	0
52000	.08/.71	.11/.70	.19/.64	.25/.42	.25/.38	.22/.30	.20/.22	.10/.12	656	656	934	470	0	0
54000	.06/.69	.08/.68	.16/.62	.24/.41	.24/.37	.22/.29	.20/.22	.10/.12	656	656	966	485	0	0
56000	.04/.67	.07/.66	.14/.61	.22/.41	.22/.37	.21/.29	.20/.22	.10/.12	656	656	998	500	0	0
58000	.04/.66	.06/.65	.12/.60	.22/.40	.22/.37	.21/.29	.20/.22	.10/.12	656	656	1010	508	0	0
60000	.04/.65	.05/.63	.11/.59	.21/.40	.21/.36	.20/.29	.19/.22	.10/.12	656	656	1031	519	0	0

FREE FLIGHT ROCKET

5 KT

(8-59)

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN OPEN FOXHOLES - LATENT LETHALITY SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	400	700	900	1300	1400	1600	1900	2500						
22000	.95/.97	.81/.90	.70/.80	.48/.52	.45/.47	.30/.32	.21/.23	.11/.13	926	926	461	246	7	U
24000	.93/.96	.79/.89	.68/.79	.47/.51	.44/.47	.30/.32	.21/.23	.11/.13	926	926	493	262	7	U
26000	.91/.96	.77/.88	.66/.78	.47/.51	.43/.47	.30/.32	.20/.23	.11/.13	926	926	523	276	7	U
28000	.90/.95	.75/.87	.65/.77	.46/.51	.42/.46	.30/.32	.20/.23	.11/.13	926	926	554	292	7	U
30000	.88/.95	.73/.87	.63/.76	.46/.51	.42/.46	.30/.32	.20/.22	.11/.13	926	926	586	306	7	U
32000	.86/.94	.71/.86	.61/.75	.45/.50	.41/.46	.30/.32	.20/.22	.11/.13	926	926	618	321	7	U
34000	.84/.94	.69/.85	.60/.74	.45/.50	.41/.46	.30/.32	.20/.22	.11/.13	926	926	649	336	7	U
36000	.82/.93	.66/.84	.58/.73	.44/.50	.41/.45	.30/.32	.20/.22	.11/.13	926	926	680	350	7	U
38000	.79/.92	.64/.83	.56/.73	.43/.49	.40/.45	.30/.32	.20/.22	.11/.13	926	926	712	366	7	U
40000	.76/.91	.62/.82	.54/.72	.42/.49	.40/.45	.30/.32	.20/.22	.11/.13	926	926	743	380	7	U
42000	.73/.90	.60/.81	.52/.71	.42/.49	.39/.45	.30/.32	.20/.22	.11/.13	926	926	775	396	7	U
44000	.70/.89	.57/.79	.51/.70	.41/.48	.38/.44	.30/.32	.20/.22	.11/.13	926	926	806	410	7	U
46000	.67/.88	.55/.78	.49/.69	.41/.48	.37/.44	.30/.32	.20/.22	.11/.13	926	926	839	426	7	U
48000	.63/.87	.53/.77	.47/.68	.40/.48	.37/.44	.30/.32	.20/.22	.10/.13	926	926	870	440	7	U
50000	.60/.86	.50/.76	.46/.67	.39/.47	.36/.43	.30/.32	.20/.22	.10/.13	926	926	902	455	7	U
52000	.56/.85	.48/.75	.44/.66	.37/.47	.35/.43	.30/.32	.20/.22	.10/.13	926	926	934	470	7	U
54000	.52/.83	.46/.74	.43/.65	.36/.46	.34/.43	.30/.32	.20/.22	.10/.12	926	926	965	485	7	U
56000	.49/.82	.43/.73	.41/.64	.35/.46	.33/.42	.30/.32	.20/.22	.10/.12	926	926	998	500	7	U
58000	.47/.81	.42/.72	.40/.64	.35/.46	.33/.42	.30/.32	.20/.22	.10/.12	926	926	1010	508	7	U
60000	.44/.81	.41/.71	.39/.63	.34/.45	.32/.42	.29/.32	.20/.22	.10/.12	926	926	1031	519	7	U

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM	LT DAM	LT ACFT	IN FLIGHT	FOREST			WILDLAND FIRES	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	FIXED BRG	TO BLDG	UTIL HEL	ASLT HEL	CARGO HEL	BLOWDOWN DECID	CONIF	CLASS I	CLASS IV
22000	6000	5700	4000	3900	3700	3000	3200	2900	2100	1000	3500	5600	6000	4500	1600	1400	4000	2600
24000	6100	5700	4000	4000	3700	3100	3200	3000	2200	1000	3500	5600	6000	4500	1600	1400	4000	2600
26000	6200	5800	4100	4100	3800	3100	3300	3000	2200	1000	3500	5600	6000	4400	1600	1400	4000	2600
28000	6200	5900	4200	4100	3900	3200	3400	3100	2300	1000	3600	5600	6000	4400	1600	1500	4000	2700
30000	6300	5900	4200	4200	3900	3300	3400	3100	2300	1000	3600	5600	6000	4400	1600	1500	4000	2700
32000	6300	6000	4300	4200	4000	3300	3500	3200	2400	1000	3600	5600	6000	4500	2000	1500	4100	2700
34000	6400	6100	4300	4300	4100	3400	3600	3300	2500	1000	3600	5600	6000	4500	2000	1500	4100	2700
36000	6500	6100	4400	4400	4100	3500	3600	3300	2500	1000	3600	5600	6000	4500	2000	1500	4100	2700
38000	6500	6200	4500	4400	4200	3500	3700	3400	2600	1100	3600	5600	5900	4500	2000	1600	4100	2700
40000	6600	6300	4500	4500	4200	3600	3700	3500	2700	1100	3700	5600	6000	4500	2000	1600	4100	2800
42000	6700	6300	4600	4600	4300	3600	3800	3500	2700	1100	3700	5600	6000	4600	2000	1600	4200	2800
44000	6700	6400	4700	4600	4400	3700	3900	3600	2800	1100	3700	5700	6000	4600	2100	1600	4200	2800
46000	6800	6400	4700	4700	4400	3800	3900	3700	2800	1100	3700	5700	6000	4600	2100	1600	4200	2800
48000	6800	6500	4800	4700	4500	3800	4000	3700	2900	1100	3700	5700	6100	4600	2100	1600	4200	2800
50000	6900	6600	4800	4800	4600	3900	4100	3800	3000	1100	3700	5700	6100	4600	2100	1600	4200	2800
52000	7000	6600	4900	4900	4600	4000	4100	3800	3000	1100	3700	5800	6100	4600	2100	1700	4200	2900
54000	7000	6700	5000	4900	4700	4000	4200	3900	3100	1100	3800	5800	6100	4700	2100	1700	4200	2900
56000	7100	6800	5000	5000	4700	4100	4200	4000	3200	1100	3800	5800	6100	4700	2200	1700	4300	2900
58000	7100	6800	5000	5000	4800	4100	4300	4000	3200	1100	3800	5800	6100	4700	2200	1700	4300	2900
60000	7200	6800	5100	5100	4800	4100	4300	4000	3200	1100	3800	5800	6200	4700	2200	1700	4300	2900

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

A FALLOUT PREDICTION SHOULD BE MADE

FREE FLIGHT ROCKET

20 KT

(9-105)

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE PERMANENT
SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	50	200	300	400	500	1100	1300	1600						
22000	.88/.95	.81/.93	.74/.90	.45/.53	.41/.45	.30/.32	.20/.22	.11/.13	606	606	461	246	0	0
24000	.84/.94	.76/.91	.69/.88	.43/.52	.40/.45	.30/.32	.20/.22	.11/.13	606	606	493	262	0	0
26000	.79/.93	.71/.90	.65/.87	.42/.52	.39/.44	.30/.32	.20/.22	.11/.13	606	606	523	276	0	0
28000	.72/.91	.65/.88	.59/.85	.40/.51	.37/.44	.30/.32	.20/.22	.10/.13	606	606	555	292	0	0
30000	.65/.89	.59/.86	.55/.83	.39/.50	.36/.44	.29/.32	.20/.22	.10/.13	606	606	586	306	0	0
32000	.56/.87	.53/.85	.50/.81	.37/.49	.34/.43	.28/.32	.20/.22	.10/.12	606	606	618	321	0	0
34000	.47/.85	.46/.83	.45/.80	.35/.48	.33/.42	.27/.31	.20/.22	.10/.12	606	606	649	336	0	0
36000	.38/.83	.40/.81	.40/.78	.33/.48	.32/.42	.26/.31	.20/.22	.10/.12	606	606	680	350	0	0
38000	.31/.81	.34/.79	.35/.76	.32/.47	.31/.41	.26/.31	.20/.22	.10/.12	606	606	712	366	0	0
40000	.24/.79	.28/.77	.30/.74	.30/.46	.29/.41	.25/.31	.20/.22	.10/.12	606	606	743	380	0	0
42000	.18/.77	.23/.74	.26/.72	.29/.45	.28/.40	.24/.30	.20/.22	.10/.12	606	606	775	396	0	0
44000	.13/.75	.18/.72	.22/.70	.27/.44	.27/.40	.23/.30	.20/.22	.10/.12	606	606	806	410	0	0
46000	.09/.72	.14/.70	.18/.68	.26/.44	.26/.39	.23/.30	.20/.22	.10/.12	606	606	839	426	0	0
48000	.06/.70	.10/.68	.15/.66	.24/.43	.25/.38	.22/.29	.20/.22	.10/.12	606	606	870	440	0	0
50000	.04/.68	.08/.66	.12/.64	.23/.42	.23/.38	.21/.29	.20/.22	.10/.12	606	606	902	455	0	0
52000	.04/.66	.06/.64	.09/.62	.21/.41	.22/.37	.21/.29	.20/.22	.10/.12	606	606	934	470	0	0
54000	.03/.64	.04/.62	.07/.60	.20/.40	.21/.36	.20/.28	.19/.22	.10/.12	606	606	966	485	0	0
56000	.02/.62	.04/.60	.05/.58	.19/.40	.19/.36	.20/.28	.18/.22	.10/.12	606	606	998	500	0	0
58000	.02/.61	.03/.59	.05/.57	.18/.39	.19/.35	.19/.28	.18/.22	.10/.12	606	606	1010	508	0	0
60000	.02/.60	.03/.58	.04/.56	.17/.39	.18/.35	.18/.28	.17/.21	.10/.12	606	606	1031	519	0	0

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE TRANSIENT
SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	200	500	600	1100	1200	1400	1700	2100						
22000	.95/.97	.80/.91	.74/.87	.46/.51	.40/.42	.30/.32	.20/.22	.11/.13	777	777	461	246	0	0
24000	.93/.96	.77/.90	.71/.86	.45/.50	.40/.42	.30/.32	.20/.22	.11/.13	777	777	493	262	0	0
26000	.91/.96	.75/.89	.69/.84	.45/.50	.40/.42	.30/.32	.20/.22	.11/.13	777	777	523	276	0	0
28000	.89/.95	.72/.88	.66/.83	.43/.50	.40/.42	.30/.32	.20/.22	.11/.13	777	777	555	292	0	0
30000	.86/.94	.69/.87	.63/.82	.43/.49	.40/.42	.30/.32	.20/.22	.11/.13	777	777	586	306	0	0
32000	.83/.93	.66/.86	.61/.81	.42/.49	.38/.42	.30/.32	.20/.22	.11/.13	777	777	618	321	0	0
34000	.79/.92	.63/.84	.58/.79	.41/.48	.37/.41	.30/.32	.20/.22	.11/.13	777	777	649	336	0	0
36000	.75/.91	.59/.83	.56/.78	.41/.48	.37/.41	.30/.32	.20/.22	.11/.13	777	777	680	350	0	0
38000	.70/.90	.56/.82	.53/.77	.40/.47	.36/.41	.30/.32	.20/.22	.10/.13	777	777	712	366	0	0
40000	.65/.89	.53/.80	.50/.76	.39/.47	.35/.41	.30/.32	.20/.22	.10/.13	777	777	743	380	0	0
42000	.60/.87	.50/.79	.47/.74	.37/.46	.34/.40	.29/.32	.20/.22	.10/.13	777	777	775	396	0	0
44000	.55/.86	.47/.77	.45/.73	.36/.46	.33/.40	.28/.32	.20/.22	.10/.12	777	777	806	410	0	0
46000	.50/.84	.44/.76	.42/.72	.34/.45	.32/.40	.28/.31	.20/.22	.10/.12	777	777	839	426	0	0
48000	.43/.83	.41/.74	.40/.70	.33/.45	.31/.39	.27/.31	.20/.22	.10/.12	777	777	870	440	0	0
50000	.37/.81	.38/.73	.37/.69	.32/.44	.31/.39	.26/.31	.20/.22	.10/.12	777	777	902	455	0	0
52000	.33/.80	.35/.72	.35/.68	.31/.44	.30/.39	.26/.31	.20/.22	.10/.12	777	777	934	470	0	0
54000	.31/.78	.32/.70	.32/.66	.30/.43	.29/.38	.25/.31	.20/.22	.10/.12	777	777	966	485	0	0
56000	.23/.76	.30/.69	.30/.65	.29/.43	.28/.38	.25/.31	.20/.22	.10/.12	777	777	998	500	0	0
58000	.21/.75	.28/.68	.29/.64	.28/.43	.27/.38	.24/.30	.20/.22	.10/.12	777	777	1010	508	0	0
60000	.18/.74	.26/.67	.27/.63	.28/.42	.27/.37	.24/.30	.20/.22	.10/.12	777	777	1031	519	0	0

FREE FLIGHT ROCKET

COVERAGE TABLE (Distances in meters)

20 KT
(9-105)

PERSONNEL IN OPEN FOXHOLES - LATENT LETHALITY SURFACE BURST

RANGE	EFFECTIVENESS RADIUS OF TARGET								PROB MIN RD	EXPT RD	ACCURACY DATA			
	400	900	1100	1500	1700	1900	2200	2900			CD/90	CEP	HOB	PEH
22000	.95/.97	.80/.88	.70/.78	.50/.52	.40/.42	.30/.32	.21/.23	.11/.13	1068	1068	461	246	0	0
24000	.95/.97	.79/.88	.68/.77	.49/.52	.40/.42	.30/.32	.21/.23	.11/.13	1068	1068	493	262	0	0
26000	.95/.97	.77/.87	.67/.76	.48/.52	.40/.42	.30/.32	.21/.23	.11/.13	1068	1068	523	276	0	0
28000	.95/.97	.76/.86	.66/.76	.48/.52	.40/.42	.30/.32	.21/.23	.11/.13	1068	1068	555	292	0	0
30000	.95/.97	.74/.86	.65/.75	.47/.51	.40/.42	.30/.32	.21/.23	.11/.13	1068	1068	586	306	0	0
32000	.93/.96	.72/.85	.63/.74	.47/.51	.40/.42	.30/.32	.20/.23	.11/.13	1068	1068	618	321	0	0
34000	.92/.96	.71/.84	.62/.74	.46/.51	.40/.42	.30/.32	.20/.23	.11/.13	1068	1068	649	336	0	0
36000	.91/.96	.69/.83	.61/.73	.46/.51	.40/.42	.30/.32	.20/.22	.11/.13	1068	1068	680	350	0	0
38000	.89/.95	.67/.82	.59/.72	.45/.50	.40/.42	.30/.32	.20/.22	.11/.13	1068	1068	712	366	0	0
40000	.87/.95	.65/.81	.58/.71	.45/.50	.40/.42	.30/.32	.20/.22	.11/.13	1068	1068	743	380	0	0
42000	.85/.94	.63/.81	.56/.71	.44/.50	.39/.42	.30/.32	.20/.22	.11/.13	1068	1068	775	396	0	0
44000	.83/.93	.62/.80	.55/.70	.43/.50	.38/.42	.30/.32	.20/.22	.11/.13	1068	1068	806	410	0	0
46000	.81/.93	.60/.79	.53/.69	.43/.49	.37/.41	.30/.32	.20/.22	.11/.13	1068	1068	839	426	0	0
48000	.78/.92	.58/.78	.52/.69	.42/.49	.37/.41	.30/.32	.20/.22	.11/.13	1068	1068	870	440	0	0
50000	.76/.91	.57/.77	.51/.68	.42/.49	.36/.41	.30/.32	.20/.22	.11/.13	1068	1068	902	455	0	0
52000	.73/.90	.55/.76	.49/.67	.41/.48	.36/.41	.30/.32	.20/.22	.11/.13	1068	1068	934	470	0	0
54000	.70/.89	.53/.75	.48/.66	.41/.48	.35/.41	.30/.32	.20/.22	.11/.13	1068	1068	966	485	0	0
56000	.66/.88	.51/.74	.47/.66	.40/.48	.35/.41	.30/.32	.20/.22	.10/.13	1068	1068	998	500	0	0
58000	.65/.88	.50/.74	.46/.65	.40/.48	.35/.40	.30/.32	.20/.22	.10/.13	1068	1068	1010	508	0	0
60000	.62/.87	.49/.73	.45/.65	.39/.47	.34/.40	.30/.32	.20/.22	.10/.13	1068	1068	1031	519	0	0

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM	LT DAM	LT ACFT OBSN	IN FLIGHT		FOREST		WILDLAND FIRES	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	DECID	CONIF	I	IV
22000	10500	9700	6200	5900	5600	4600	4400	4000	2200	1300	5400	9000	9300	8700	2000	2200	6700	4500
24000	10600	9800	6300	6000	5600	4700	4500	4100	2300	1400	5400	9000	9300	8700	2000	2200	6700	4500
26000	10700	9800	6400	6100	5700	4700	4500	4100	2400	1400	5400	9000	9300	8700	2000	2200	6700	4500
28000	10700	9900	6400	6100	5800	4800	4600	4200	2400	1400	5400	9000	9300	8700	2000	2200	6700	4500
30000	10800	9900	6500	6200	5800	4900	4700	4200	2500	1400	5400	9000	9300	8700	2000	2300	6700	4500
32000	10900	10000	6500	6200	5900	4900	4700	4300	2500	1400	5400	9000	9300	8700	2000	2300	6700	4500
34000	10900	10100	6600	6300	5900	5000	4800	4400	2600	1400	5400	9000	9300	8700	2000	2300	6700	4500
36000	11000	10100	6700	6400	6000	5100	4900	4400	2700	1500	5300	9000	9300	8700	2000	2300	6700	4600
38000	11000	10200	6700	6400	6100	5100	4900	4500	2700	1500	5400	9000	9300	8700	2000	2300	6700	4600
40000	11100	10200	6800	6500	6100	5200	5000	4500	2800	1500	5400	9000	9300	8700	2000	2400	6700	4600
42000	11200	10300	6800	6600	6200	5200	5000	4600	2800	1500	5400	9000	9300	8700	2000	2400	6700	4600
44000	11200	10400	6900	6600	6300	5300	5100	4700	2900	1500	5400	9000	9300	8700	2000	2400	6700	4600
46000	11300	10400	7000	6700	6300	5400	5200	4700	3000	1500	5500	9000	9300	8700	2100	2400	6700	4700
48000	11300	10500	7000	6700	6400	5400	5200	4800	3000	1600	5500	9000	9300	8700	2100	2400	6700	4700
50000	11400	10600	7100	6800	6400	5500	5300	4900	3100	1600	5500	9000	9300	8700	2100	2400	6700	4700
52000	11500	10600	7200	6900	6500	5500	5300	4900	3200	1600	5500	9000	9300	8700	2100	2500	6700	4700
54000	11500	10700	7200	6900	6600	5600	5400	5000	3200	1600	5500	9000	9300	8700	2100	2500	6700	4700
56000	11600	10700	7300	7000	6600	5700	5500	5000	3300	1600	5600	9000	9300	8700	2100	2500	6700	4700
58000	11600	10800	7300	7000	6600	5700	5500	5100	3300	1600	5600	9000	9300	8700	2200	2500	6700	4800
60000	11600	10800	7300	7000	6700	5700	5500	5100	3300	1600	5600	9000	9300	8700	2200	2500	6700	4800

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

A FALLOUT PREDICTION SHOULD BE MADE

GUIDED MISSILE
10 KT
(9-80)

COVERAGE TABLE
 (Distances in meters)

P E R S O N N E L I N O P E N F O X H O L E S - I M M E D I A T E P E R M A N E N T
 S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	200	300	400	700	950	1300	1800						
50-150 Km	.02/.59	.03/.57	.04/.55	.07/.52	.16/.41	.18/.31	.16/.21	.10/.12	578	578	911	500	0	3

COVERAGE TABLE
 (Distances in meters)

P E R S O N N E L I N O P E N F O X H O L E S - I M M E D I A T E T R A N S I E N T
 S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	400	600	850	1100	1300	1700	2400						
50-150 Km	.15/.75	.24/.70	.28/.62	.28/.51	.27/.40	.25/.31	.20/.22	.10/.12	747	747	911	500	0	3

GUIDED MISSILE
10 KT
(9-80)

COVERAGE TABLE
 (Distances in meters)

PERSONNEL IN OPEN FOXHOLES - LATENT LETHALITY
 SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	700	900	1400	1600	1900	2300	3300						
50-150 Km	.71/.91	.54/.80	.49/.72	.40/.50	.35/.41	.30/.32	.20/.22	.10/.13	1038	1038	911	500	0	0

SAFETY DISTANCE TABLE
 (Distances in meters)

TROOP SAFETY (MSD)										PRECLUDE (LSD)									
RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED BRG	LT DAM TO BLDG	LT ACFT OBSN UTIL HEL	IN FLIGHT OV-1B ASLT HEL	CARGO HEL	FOREST BLOWDOWN DECID	CONIF	WILDLAND FIRES		
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER								CLASS I	CLASS IV	
50-150 Km	8600	8100	5700	5600	5300	4500	4500	4100	2800	1400	4700	7300	7600	6500	2600	2000	5500	3800	

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

A FALLOUT PREDICTION SHOULD BE MADE

GUIDED MISSILE
50 KT
(11-159)

COVERAGE TABLE
 (Distances in meters)

P E R S O N N E L I N O P E N F O X H O L E S - I M M E D I A T E P E R M A N E N T
 S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	400	600	800	1050	1300	1600	2300						
50-150 Km	.12/.74	.22/.68	.26/.60	.27/.52	.27/.41	.23/.30	.20/.22	.10/.12	729	729	911	500	0	0

COVERAGE TABLE
 (Distances in meters)

P E R S O N N E L I N O P E N F O X H O L E S - I M M E D I A T E T R A N S I E N T
 S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	400	700	1200	1400	1700	2000	2900						
50-150 Km	.50/.86	.47/.81	.42/.72	.36/.50	.32/.40	.27/.31	.20/.22	.10/.12	914	914	911	500	0	0

GUIDED MISSILE
50 KT
(11-159)

COVERAGE TABLE
 (Distances in meters)

P E R S O N N E L I N O P E N F O X H O L E S - L A T E N T L E T H A L I T Y
 S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	400	700	1650	1900	2200	2800	4000						
50-150 Km	.88/.95	.81/.93	.70/.88	.44/.52	.39/.42	.30/.32	.20/.22	.06/.08	1226	1226	911	500	0	0

SAFETY DISTANCE TABLE
 (Distances in meters)

T R O O P S A F E T Y (M S D) ----- P R E C L U D E (L S D) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT	CARGO HEL	FOREST BLOWDOWN DECID	CONIF	WILDLAND FIRES CLASS	CLASS
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL			I	IV
50-150 Km	16900	15600	9400	9100	8500	6900	6400	5800	3300	2000	7400	12700	12900	12700	4300	3500	10000	6500

A FALLOUT PREDICTION SHOULD BE MADE

GUIDED MISSILE
100 KT
(11-218)

COVERAGE TABLE
 (Distances in meters)

P E R S O N N E L I N O P E N F O X H O L E S - I M M E D I A T E P E R M A N E N T
 S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	600	800	1000	1250	1500	1900	2700						
50-150 Km	.36/.82	.37/.71	.36/.62	.34/.53	.31/.42	.27/.31	.20/.22	.10/.12	847	847	911	500	0	0

COVERAGE TABLE
 (Distances in meters)

P E R S O N N E L I N O P E N F O X H O L E S - I M M E D I A T E T R A N S I E N T
 S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	500	900	1400	1600	1900	2300	3300						
50-150 Km	.73/.91	.61/.86	.50/.73	.40/.50	.36/.41	.30/.32	.20/.22	.10/.13	1047	1047	911	500	0	0

GUIDED MISSILE
100 KT
(11-218)

COVERAGE TABLE
 (Distances in meters)

P E R S O N N E L I N O P E N F O X H O L E S - L A T E N T L E T H A L I T Y
 S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	400	700	1000	1900	2200	2500	3100	4200						
50-150 Km	.90/.95	.81/.92	.70/.86	.46/.53	.39/.42	.30/.32	.20/.22	.11/.13	1382	1382	911	500	0	0

SAFETY DISTANCE TABLE
 (Distances in meters)

T R O O P S A F E T Y (M S D) ----- P R E C L U D E (L S D) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT OBSN UTIL	ACFT IN FLIGHT OV-1B ASLT	CARGO HEL	FOREST BLOWDOWN DECID	CONIF	WILDLAND FIRES CLASS	CLASS
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL			I	IV
50-150 Km	23500	21600	14000	12500	11600	9000	8000	7200	3900	2600	9700	16900	16900	16900	5500	4600	14500	9000

A FALLOUT PREOICTON SHOULD BE MADE

MARK 50 BOMB

COVERAGE TABLE
(Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE PERMANENT
SURFACE BURST

EFFECTIVENESS									PROB	ACCURACY DATA				
YIELD	RADIUS OF TARGET								MIN	EXPT	CD/90	CEP	HOB	PEH
	200	325	450	600	700	800	900	1200	RD	RD				
3 KT [7-46]	.95/.97	.86/.93	.71/.78	.52/.56	.40/.42	.30/.32	.21/.23	.11/.13	440	440	182	100	0	0
	.42/.80	.40/.71	.38/.60	.34/.47	.31/.39	.27/.31	.20/.22	.10/.12	440	440	455	250	0	0
	.00/.40	.01/.38	.03/.34	.05/.30	.07/.27	.09/.24	.11/.19	.10/.12	440	440	911	500	0	0
	.00/.22	.00/.21	.00/.20	.00/.19	.00/.17	.01/.16	.02/.14	.04/.10	440	440	1366	750	0	0
10 KT [9-80]	.95/.97	.89/.93	.69/.75	.50/.52	.40/.42	.31/.33	.21/.23	.11/.13	579	578	182	100	0	0
	.65/.86	.58/.79	.48/.63	.42/.49	.37/.41	.30/.32	.20/.22	.11/.13	579	578	455	250	0	0
	.05/.54	.09/.51	.15/.43	.17/.37	.18/.33	.18/.28	.16/.21	.10/.12	579	578	911	500	0	0
	.00/.32	.00/.31	.02/.28	.03/.26	.03/.24	.04/.21	.08/.18	.09/.12	579	578	1366	750	0	0
100 KT [11-218]	.95/.97	.85/.87	.70/.72	.50/.52	.41/.43	.31/.33	.21/.23	.11/.13	847	847	182	100	0	0
	.80/.90	.68/.79	.57/.66	.46/.51	.40/.42	.30/.32	.20/.23	.11/.13	847	847	455	250	0	0
	.37/.71	.36/.62	.34/.53	.32/.44	.31/.39	.27/.31	.20/.22	.10/.12	847	847	911	500	0	0
	.06/.51	.10/.46	.14/.41	.16/.36	.17/.33	.17/.28	.17/.21	.10/.12	847	847	1366	750	0	0

COVERAGE TABLE
(Distances in meters)

PERSONNEL IN OPEN FOXHOLES - IMMEDIATE TRANSIENT
SURFACE BURST

YIELD	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	300	500	600	800	900	1050	1200	1600						
3 KT [7-46]	.95/.97	.85/.90	.75/.80	.50/.52	.40/.42	.31/.33	.21/.23	.11/.13	580	580	182	100	0	0
	.69/.88	.56/.76	.50/.67	.42/.49	.37/.41	.30/.32	.20/.22	.11/.13	580	580	455	250	0	0
	.04/.55	.10/.49	.13/.45	.17/.37	.18/.33	.18/.28	.14/.21	.10/.12	580	580	911	500	0	0
	.00/.33	.01/.31	.01/.29	.03/.26	.03/.24	.05/.21	.07/.18	.09/.12	580	580	1366	750	0	0
10 KT [9-80]	400	700	800	1050	1200	1300	1700	2200						
	.95/.97	.83/.87	.76/.81	.50/.52	.40/.43	.31/.33	.21/.23	.11/.13	747	747	182	100	0	0
	.83/.93	.64/.78	.58/.71	.46/.51	.40/.42	.30/.32	.20/.22	.11/.13	747	747	455	250	0	0
	.24/.70	.28/.58	.28/.53	.28/.42	.26/.37	.25/.31	.20/.22	.10/.12	747	747	911	500	0	0
100 KT [11-218]	.02/.46	.04/.41	.06/.38	.10/.33	.12/.29	.13/.26	.14/.20	.10/.12	747	747	1366	750	0	0
	700	1100	1200	1500	1600	1900	2200	2800						
	.95/.97	.80/.82	.70/.72	.50/.52	.41/.43	.31/.33	.21/.23	.11/.13	1047	1047	182	100	0	0
	.88/.94	.68/.77	.63/.70	.48/.52	.40/.42	.30/.32	.21/.23	.11/.13	1047	1047	455	250	0	0
	.55/.80	.46/.64	.44/.60	.39/.47	.36/.41	.30/.32	.20/.22	.10/.13	1047	1047	911	500	0	0
	.20/.63	.24/.52	.25/.49	.25/.40	.25/.37	.22/.30	.20/.22	.10/.12	1047	1047	1366	750	0	0

MARK 50 BOMB

COVERAGE TABLE (Distances in meters)

PERSONNEL IN OPEN FOXHOLES - LATENT LETHALITY SURFACE BURST

		EFFECTIVENESS								PROB		ACCURACY DATA			
		RADIUS OF TARGET								MIN	EXPT				
YIELD		400	800	900	1150	1300	1500	1700	2200	RD	RD	CD/90	CEP	HOB	PEH
3 KT [7-46]		.95/.97	.83/.87	.75/.77	.50/.52	.41/.43	.31/.33	.21/.23	.11/.13	827	827	182	100	0	0
		.90/.95	.66/.78	.60/.71	.47/.51	.40/.42	.30/.32	.20/.23	.11/.13	827	827	455	250	0	0
		.35/.76	.34/.61	.34/.56	.31/.44	.30/.38	.26/.31	.20/.22	.10/.12	827	827	911	500	0	0
		.03/.53	.09/.45	.11/.42	.15/.36	.16/.32	.17/.27	.16/.21	.10/.12	827	827	1366	750	0	0
10 KT [9-80]		.750	.1050	.1200	.1450	.1650	.1900	.2300	.2900						
		.95/.97	.81/.85	.70/.72	.50/.52	.41/.43	.31/.33	.21/.23	.11/.13	1038	1038	182	100	0	0
		.86/.92	.70/.79	.62/.69	.50/.52	.40/.42	.30/.32	.21/.23	.11/.13	1038	1038	455	250	0	0
		.53/.78	.46/.66	.43/.59	.40/.48	.34/.40	.30/.32	.20/.22	.10/.13	1038	1038	911	500	0	0
	.20/.61	.24/.53	.24/.48	.25/.41	.24/.36	.22/.29	.20/.22	.10/.12	1038	1038	1366	750	0	0	
100 KT [11-218]		.1000	.1400	.1600	.1950	.2200	.2400	.2900	.3800						
		.95/.97	.83/.87	.70/.72	.51/.53	.41/.43	.31/.33	.21/.23	.11/.13	1382	1382	182	100	0	0
		.90/.95	.75/.81	.67/.71	.50/.52	.40/.42	.31/.33	.21/.23	.11/.13	1382	1382	455	250	0	0
		.70/.86	.58/.72	.53/.64	.44/.50	.39/.42	.30/.32	.20/.22	.11/.13	1382	1382	911	500	0	0
	.43/.74	.40/.62	.38/.56	.35/.46	.32/.39	.30/.32	.20/.22	.10/.12	1382	1382	1366	750	0	0	

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

YIELD	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT ASLT HEL	OV-1B CARGO HEL	FOREST BLOWDOWN DECID CONIF	WILDLAND FIRES CLASS I	CLASS IV
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	HEL	HEL	HEL
3 KT [7-46]	4400	4100	2600	2700	2500	1900	2200	2600	1400*	700	2800	4500	4900	3400	1400	1000	3100
	4600	4500	3000	3000	2800	2300	2600	2400	1800*	800	2900	4500	4900	3400	1500	1200	3100
	5400	5100	3700	3700	3500	3000	3200	3000	2500*	900	3100	4700	5000	3600	1800	1400	3300
	6100	5800	4300	4400	4200	3600	3800	3700	3100*	900	3400	4900	5200	3900	1900	1500	3500
10 KT [9-80]	7500	7000	4600	4500	4200	3400	3300	3000	1700*	1100	4500	7300	7700	6500	2200	1600	5400
	7900	7400	5000	4900	4600	3800	3700	3400	2100*	1200	4500	7300	7700	6500	2300	1800	5400
	8600	8100	5700	5600	5300	4500	4500	4100	2800*	1400	4700	7300	7600	6500	2400	2000	5500
	9400	8800	6400	6300	6000	5200	5200	4800	3500*	1600	4900	7600	7900	6800	2500	2200	5700
100 KT [11-218]	22100	20500	12900	11400	10500	7900	6800	6100	2800	2300	9700	16900	16900	16900	5400	4400	14500
	22600	20900	13300	11800	10900	8300	7300	6500	3200	2400	9700	16900	16900	16900	5400	4400	14500
	23300	21600	14000	12500	11600	9000	8000	7200	3900	2600	9700	16900	16900	16900	5500	4600	14500
	24000	22300	14700	13200	12300	9700	8700	7900	4600	2900	9800	16900	16900	16900	5800	4800	14500

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

A FALLOUT PREDICTION SHOULD BE MADE

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CHAPTER 10
COVERAGE AND SAFETY TABLES FOR
SURFACE BURST
PERSONNEL IN TANKS

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FREE FLIGHT ROCKET

5 KT

(8-59)

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE PERMANENT SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	50	200	400	750	900	1000	1200	1500						
22000	.82/.93	.73/.90	.59/.81	.42/.51	.35/.41	.30/.32	.20/.22	.11/.13	55A	558	461	246	0	0
24000	.75/.92	.67/.89	.55/.79	.41/.51	.34/.40	.30/.32	.20/.22	.10/.13	55A	558	493	262	0	0
26000	.67/.90	.61/.87	.51/.77	.39/.50	.33/.40	.30/.32	.20/.22	.10/.13	55A	558	523	276	0	0
28000	.59/.88	.54/.85	.46/.75	.37/.49	.32/.39	.29/.32	.20/.22	.10/.12	55A	558	555	292	0	0
30000	.50/.86	.47/.83	.43/.73	.35/.48	.31/.39	.28/.32	.20/.22	.10/.12	55A	558	586	306	0	0
32000	.39/.84	.40/.80	.39/.71	.33/.47	.30/.38	.27/.31	.20/.22	.10/.12	55A	558	618	321	0	0
34000	.32/.81	.34/.78	.35/.70	.32/.46	.29/.38	.26/.31	.20/.22	.10/.12	55A	558	649	336	0	0
36000	.24/.79	.28/.76	.32/.68	.30/.46	.28/.37	.25/.31	.20/.22	.10/.12	55A	558	680	350	0	0
38000	.18/.77	.23/.74	.28/.66	.29/.45	.27/.37	.25/.30	.20/.22	.10/.12	55A	558	712	366	0	0
40000	.13/.74	.18/.72	.25/.64	.27/.44	.26/.36	.24/.30	.20/.22	.10/.12	55A	558	743	380	0	0
42000	.09/.72	.14/.69	.22/.62	.26/.43	.25/.36	.23/.30	.20/.22	.10/.12	55A	558	775	396	0	0
44000	.05/.70	.10/.67	.19/.60	.24/.42	.23/.35	.22/.30	.20/.22	.10/.12	55A	558	806	410	0	0
46000	.04/.67	.07/.65	.16/.58	.22/.41	.22/.35	.21/.29	.20/.22	.10/.12	55A	558	839	426	0	0
48000	.03/.65	.05/.63	.13/.57	.21/.40	.21/.34	.21/.29	.19/.22	.10/.12	55A	558	870	440	0	0
50000	.03/.63	.04/.61	.11/.55	.19/.39	.20/.33	.20/.28	.18/.22	.10/.12	55A	558	902	455	0	0
52000	.02/.61	.04/.59	.09/.53	.18/.39	.19/.33	.19/.28	.18/.21	.10/.12	55A	558	934	470	0	0
54000	.01/.59	.03/.57	.07/.51	.16/.38	.18/.32	.18/.28	.17/.21	.10/.12	55A	558	966	485	0	0
56000	.01/.57	.02/.55	.05/.50	.15/.37	.16/.32	.17/.27	.17/.21	.10/.12	55A	558	998	500	0	0
58000	.01/.56	.02/.54	.05/.49	.14/.37	.16/.31	.16/.27	.16/.21	.10/.12	55A	558	1010	508	0	0
60000	.00/.54	.02/.53	.04/.48	.13/.36	.15/.31	.16/.27	.16/.21	.10/.12	55A	558	1031	519	0	0

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE TRANSIENT SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	400	500	1000	1100	1300	1500	1900						
22000	.95/.97	.81/.92	.74/.88	.45/.50	.40/.42	.30/.32	.20/.22	.11/.13	714	714	461	246	0	0
24000	.93/.96	.77/.91	.71/.87	.45/.50	.40/.42	.30/.32	.20/.22	.11/.13	714	714	493	262	0	0
26000	.91/.96	.74/.90	.67/.85	.44/.50	.40/.42	.30/.32	.20/.22	.11/.13	714	714	523	276	0	0
28000	.87/.95	.71/.89	.64/.84	.42/.49	.39/.42	.30/.32	.20/.22	.11/.13	714	714	555	292	0	0
30000	.84/.94	.67/.87	.61/.83	.42/.49	.38/.42	.30/.32	.20/.22	.11/.13	714	714	586	306	0	0
32000	.79/.93	.63/.86	.58/.81	.41/.48	.37/.41	.30/.32	.20/.22	.11/.13	714	714	618	321	0	0
34000	.74/.91	.59/.84	.55/.80	.40/.48	.36/.41	.30/.32	.20/.22	.10/.13	714	714	649	336	0	0
36000	.68/.90	.56/.83	.52/.78	.39/.47	.35/.41	.30/.32	.20/.22	.10/.13	714	714	680	350	0	0
38000	.61/.88	.52/.81	.48/.77	.37/.47	.34/.40	.29/.32	.20/.22	.10/.12	714	714	712	366	0	0
40000	.55/.87	.48/.80	.45/.75	.36/.46	.33/.40	.28/.32	.20/.22	.10/.12	714	714	743	380	0	0
42000	.47/.85	.44/.78	.42/.74	.34/.46	.32/.40	.27/.31	.20/.22	.10/.12	714	714	775	396	0	0
44000	.41/.83	.41/.76	.39/.72	.33/.45	.31/.39	.27/.31	.20/.22	.10/.12	714	714	806	410	0	0
46000	.35/.82	.37/.75	.36/.71	.32/.44	.30/.39	.26/.31	.20/.22	.10/.12	714	714	839	426	0	0
48000	.30/.80	.33/.73	.33/.69	.31/.44	.29/.39	.25/.31	.20/.22	.10/.12	714	714	870	440	0	0
50000	.22/.78	.29/.71	.31/.67	.29/.43	.28/.38	.25/.31	.20/.22	.10/.12	714	714	902	455	0	0
52000	.18/.76	.26/.70	.28/.66	.28/.43	.27/.38	.24/.30	.20/.22	.10/.12	714	714	934	470	0	0
54000	.13/.74	.23/.68	.25/.64	.27/.42	.26/.37	.23/.30	.20/.22	.10/.12	714	714	966	485	0	0
56000	.10/.72	.20/.67	.23/.63	.26/.42	.26/.37	.23/.30	.20/.22	.10/.12	714	714	998	500	0	0
58000	.09/.71	.19/.66	.21/.62	.25/.41	.25/.37	.22/.30	.20/.22	.10/.12	714	714	1010	508	0	0
60000	.07/.70	.17/.65	.20/.61	.25/.41	.24/.36	.22/.29	.20/.22	.10/.12	714	714	1031	519	0	0

FREE FLIGHT ROCKET

COVERAGE TABLE (Distances in meters)

5 KT
(8-59)

PERSONNEL IN TANKS - LATENT LETHALITY SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	400	800	900	1400	1500	1700	2100	2600						
22000	.95/.97	.80/.88	.74/.84	.48/.52	.40/.42	.30/.32	.21/.23	.11/.13	981	981	461	246	0	0
24000	.95/.97	.78/.88	.72/.84	.47/.51	.40/.42	.30/.32	.21/.23	.11/.13	981	981	493	262	0	0
26000	.94/.96	.76/.87	.71/.83	.47/.51	.40/.42	.30/.32	.21/.23	.11/.13	981	981	523	276	0	0
28000	.92/.96	.74/.86	.69/.82	.46/.51	.40/.42	.30/.32	.20/.23	.11/.13	981	981	555	292	0	0
30000	.91/.96	.72/.85	.67/.81	.46/.51	.40/.42	.30/.32	.20/.23	.11/.13	981	981	584	306	0	0
32000	.90/.95	.70/.84	.66/.80	.45/.50	.40/.42	.30/.32	.20/.22	.11/.13	981	981	613	321	0	0
34000	.88/.95	.68/.83	.64/.79	.45/.50	.40/.42	.30/.32	.20/.22	.11/.13	981	981	649	336	0	0
36000	.86/.94	.66/.83	.62/.78	.44/.50	.40/.42	.30/.32	.20/.22	.11/.13	981	981	680	350	0	0
38000	.84/.93	.64/.82	.60/.77	.43/.49	.40/.42	.30/.32	.20/.22	.11/.13	981	981	712	366	0	0
40000	.81/.93	.62/.81	.59/.76	.42/.49	.40/.42	.30/.32	.20/.22	.11/.13	981	981	743	380	0	0
42000	.78/.92	.61/.80	.57/.75	.42/.49	.40/.42	.30/.32	.20/.22	.11/.13	981	981	775	396	0	0
44000	.76/.91	.59/.79	.55/.74	.41/.48	.39/.42	.30/.32	.20/.22	.11/.13	981	981	806	410	0	0
46000	.73/.90	.57/.78	.53/.73	.41/.48	.38/.42	.30/.32	.20/.22	.11/.13	981	981	839	426	0	0
48000	.70/.89	.55/.77	.52/.72	.41/.48	.37/.41	.30/.32	.20/.22	.11/.13	981	981	870	440	0	0
50000	.66/.88	.53/.76	.50/.71	.40/.47	.36/.41	.30/.32	.20/.22	.11/.13	981	981	902	455	0	0
52000	.63/.87	.51/.75	.48/.70	.39/.47	.36/.41	.30/.32	.20/.22	.10/.13	981	981	934	470	0	0
54000	.60/.86	.49/.74	.46/.69	.38/.47	.35/.41	.30/.32	.20/.22	.10/.13	981	981	966	485	0	0
56000	.56/.85	.46/.73	.45/.69	.37/.46	.34/.41	.30/.32	.20/.22	.10/.13	981	981	998	500	0	0
58000	.54/.84	.45/.72	.44/.68	.36/.46	.34/.40	.30/.32	.20/.22	.10/.12	981	981	1010	508	0	0
60000	.52/.83	.44/.71	.43/.67	.36/.46	.33/.40	.30/.32	.20/.22	.10/.12	981	981	1031	519	0	0

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM BLDG	LT ACFT IN FLIGHT		OV-1B		FOREST		WILDLAND FIRES	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER			UTIL	ASLT	CARGO	BLOWDOWN	DECID	CONIF	CLASS I	CLASS IV
22000	6000	5700	4000	3900	3700	3000	3200	2900	2100	1000	3500	5600	6000	4500	1600	1400	1400	4000	2600
24000	6100	5700	4000	4000	3700	3100	3200	3000	2200	1000	3500	5600	6000	4500	1600	1400	1400	4000	2600
26000	6200	5800	4100	4100	3800	3100	3300	3000	2200	1000	3500	5600	6000	4400	1600	1400	1400	4000	2600
28000	6200	5900	4200	4100	3900	3200	3400	3100	2300	1000	3600	5600	6000	4400	1600	1500	1500	4000	2700
30000	6300	5900	4200	4200	3900	3300	3400	3100	2300	1000	3600	5600	6000	4400	1600	1500	1500	4000	2700
32000	6300	6000	4300	4200	4000	3300	3500	3200	2400	1000	3600	5600	6000	4500	2000	1500	1500	4100	2700
34000	6400	6100	4300	4300	4100	3400	3600	3300	2500	1000	3600	5600	6000	4500	2000	1500	1500	4100	2700
36000	6500	6100	4400	4400	4100	3500	3600	3300	2500	1000	3600	5600	6000	4500	2000	1500	1500	4100	2700
38000	6500	6200	4500	4400	4200	3500	3700	3400	2600	1100	3600	5600	5900	4500	2000	1600	1600	4100	2700
40000	6600	6300	4500	4500	4200	3600	3700	3500	2700	1100	3700	5600	6000	4500	2000	1600	1600	4100	2800
42000	6700	6300	4600	4600	4300	3600	3800	3500	2700	1100	3700	5600	6000	4600	2000	1600	1600	4200	2800
44000	6700	6400	4700	4600	4400	3700	3800	3600	2800	1100	3700	5700	6000	4600	2100	1600	1600	4200	2800
46000	6800	6400	4700	4700	4400	3800	3900	3700	2800	1100	3700	5700	6000	4600	2100	1600	1600	4200	2800
48000	6800	6500	4800	4700	4500	3800	4000	3700	2900	1100	3700	5700	6100	4600	2100	1600	1600	4200	2800
50000	6900	6600	4800	4800	4600	3900	4100	3800	3000	1100	3700	5700	6100	4600	2100	1600	1600	4200	2800
52000	7000	6600	4900	4900	4600	4000	4100	3800	3000	1100	3700	5800	6100	4600	2100	1700	1700	4200	2900
54000	7000	6700	5000	4900	4700	4000	4200	3900	3100	1100	3800	5800	6100	4700	2100	1700	1700	4200	2900
56000	7100	6800	5000	5000	4700	4100	4200	4000	3200	1100	3800	5800	6100	4700	2200	1700	1700	4300	2900
58000	7100	6800	5000	5000	4800	4100	4300	4000	3200	1100	3800	5800	6100	4700	2200	1700	1700	4300	2900
60000	7200	6800	5100	5100	4800	4100	4300	4000	3200	1100	3800	5800	6200	4700	2200	1700	1700	4300	2900

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

A FALLOUT PREDICTION SHOULD BE MADE

FREE FLIGHT ROCKET

20 KT
(9-105)

COVERAGE TABLE (Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE PERMANENT SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	300	400	900	1000	1200	1400	1800						
22000	.92/.96	.81/.93	.74/.90	.45/.53	.41/.46	.30/.32	.20/.22	.11/.13	662	662	461	246	0	0
24000	.89/.95	.78/.92	.71/.88	.45/.52	.40/.45	.30/.32	.20/.22	.11/.13	662	662	493	262	0	0
26000	.86/.94	.74/.90	.67/.87	.43/.52	.40/.45	.30/.32	.20/.22	.11/.13	662	662	523	276	0	0
28000	.81/.93	.69/.89	.63/.85	.42/.51	.38/.44	.30/.32	.20/.22	.11/.13	662	662	555	292	0	0
30000	.76/.92	.65/.87	.59/.84	.41/.50	.37/.44	.30/.32	.20/.22	.11/.13	662	662	586	306	0	0
32000	.69/.90	.60/.86	.55/.82	.40/.50	.36/.43	.30/.32	.20/.22	.10/.13	662	662	619	321	0	0
34000	.62/.89	.55/.84	.51/.80	.38/.49	.35/.43	.29/.32	.20/.22	.10/.13	662	662	649	336	0	0
36000	.56/.87	.51/.82	.47/.79	.36/.48	.34/.43	.28/.32	.20/.22	.10/.12	662	662	680	350	0	0
38000	.48/.85	.46/.81	.43/.77	.35/.48	.32/.42	.27/.31	.20/.22	.10/.12	662	662	712	366	0	0
40000	.41/.83	.40/.79	.40/.75	.33/.47	.31/.42	.27/.31	.20/.22	.10/.12	662	662	743	380	0	0
42000	.34/.81	.36/.77	.36/.73	.32/.46	.31/.41	.26/.31	.20/.22	.10/.12	662	662	775	396	0	0
44000	.29/.79	.31/.75	.33/.72	.31/.45	.30/.41	.25/.31	.20/.22	.10/.12	662	662	806	410	0	0
46000	.21/.77	.27/.73	.29/.70	.29/.45	.28/.40	.25/.31	.20/.22	.10/.12	662	662	839	426	0	0
48000	.16/.75	.23/.72	.26/.68	.28/.44	.27/.39	.24/.30	.20/.22	.10/.12	662	662	870	440	0	0
50000	.12/.73	.19/.70	.23/.66	.27/.43	.26/.39	.23/.30	.20/.22	.10/.12	662	662	902	455	0	0
52000	.09/.71	.17/.68	.20/.65	.26/.43	.25/.38	.22/.30	.20/.22	.10/.12	662	662	934	470	0	0
54000	.06/.69	.13/.66	.17/.63	.24/.42	.24/.38	.22/.29	.20/.22	.10/.12	662	662	966	485	0	0
56000	.05/.68	.10/.64	.14/.61	.23/.41	.23/.37	.21/.29	.20/.22	.10/.12	662	662	999	500	0	0
58000	.04/.67	.09/.63	.13/.61	.22/.41	.22/.37	.21/.29	.20/.22	.10/.12	662	662	1010	508	0	0
60000	.04/.65	.08/.62	.11/.59	.21/.40	.21/.36	.21/.29	.20/.22	.10/.12	662	662	1031	519	0	0

COVERAGE TABLE (Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE TRANSIENT SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	200	500	700	1100	1300	1500	1700	2200						
22000	.95/.97	.85/.94	.73/.85	.50/.56	.40/.42	.30/.32	.20/.23	.11/.13	831	831	461	246	0	0
24000	.95/.97	.83/.93	.70/.84	.49/.55	.40/.42	.30/.32	.20/.23	.11/.13	831	831	493	262	0	0
26000	.94/.97	.80/.92	.68/.83	.48/.55	.40/.42	.30/.32	.20/.22	.11/.13	831	831	523	276	0	0
28000	.92/.96	.78/.91	.66/.82	.47/.54	.40/.42	.30/.32	.20/.22	.11/.13	831	831	555	292	0	0
30000	.90/.95	.75/.90	.64/.81	.46/.54	.40/.42	.30/.32	.20/.22	.11/.13	831	831	586	306	0	0
32000	.88/.95	.72/.89	.61/.80	.46/.53	.39/.42	.30/.32	.20/.22	.11/.13	831	831	619	321	0	0
34000	.85/.94	.69/.88	.60/.78	.45/.53	.38/.42	.30/.32	.20/.22	.11/.13	831	831	649	336	0	0
36000	.82/.93	.66/.87	.57/.77	.44/.52	.37/.41	.30/.32	.20/.22	.11/.13	831	831	680	350	0	0
38000	.78/.92	.63/.85	.55/.76	.43/.52	.36/.41	.30/.32	.20/.22	.11/.13	831	831	712	366	0	0
40000	.74/.91	.60/.84	.53/.75	.42/.51	.36/.41	.30/.32	.20/.22	.11/.13	831	831	743	380	0	0
42000	.69/.90	.57/.93	.50/.74	.41/.51	.35/.41	.30/.32	.20/.22	.10/.13	831	831	775	396	0	0
44000	.65/.89	.54/.81	.48/.73	.40/.50	.34/.40	.30/.32	.20/.22	.10/.13	831	831	806	410	0	0
46000	.59/.87	.51/.80	.46/.71	.38/.50	.33/.40	.29/.32	.20/.22	.10/.12	831	831	839	426	0	0
48000	.54/.86	.47/.79	.43/.70	.37/.49	.33/.40	.28/.32	.20/.22	.10/.12	831	831	870	440	0	0
50000	.50/.85	.44/.77	.41/.69	.36/.49	.32/.40	.28/.31	.20/.22	.10/.12	831	831	902	455	0	0
52000	.44/.83	.42/.76	.39/.68	.34/.48	.31/.39	.27/.31	.20/.22	.10/.12	831	831	934	470	0	0
54000	.38/.82	.39/.75	.37/.67	.33/.47	.31/.39	.26/.31	.20/.22	.10/.12	831	831	966	485	0	0
56000	.34/.80	.36/.73	.35/.65	.32/.47	.30/.39	.26/.31	.20/.22	.10/.12	831	831	999	500	0	0
58000	.33/.79	.34/.72	.34/.65	.31/.47	.29/.38	.26/.31	.20/.22	.10/.12	831	831	1010	508	0	0
60000	.31/.78	.32/.71	.32/.64	.31/.46	.29/.38	.25/.31	.20/.22	.10/.12	831	831	1031	519	0	0

FREE FLIGHT ROCKET

20 KT

(9-105)

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN TANKS - LATENT LETHALITY SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	400	900	1100	1600	1700	2000	2300	3000						
22000	.95/.97	.83/.90	.73/.81	.49/.52	.40/.42	.30/.32	.21/.23	.11/.13	1113	1113	461	246	0	0
24000	.95/.97	.81/.89	.72/.80	.48/.52	.40/.42	.30/.32	.21/.23	.11/.13	1113	1113	493	262	0	0
26000	.95/.97	.80/.89	.71/.80	.47/.51	.40/.42	.30/.32	.21/.23	.11/.13	1113	1113	523	276	0	0
28000	.95/.97	.79/.88	.69/.79	.47/.51	.40/.42	.30/.32	.21/.23	.11/.13	1113	1113	555	292	0	0
30000	.95/.97	.77/.87	.68/.78	.46/.51	.40/.42	.30/.32	.21/.23	.11/.13	1113	1113	586	306	0	0
32000	.95/.97	.76/.87	.66/.77	.46/.51	.40/.42	.30/.32	.21/.23	.11/.13	1113	1113	618	321	0	0
34000	.93/.96	.74/.86	.65/.77	.46/.50	.40/.42	.30/.32	.20/.23	.11/.13	1113	1113	649	336	0	0
36000	.92/.96	.72/.85	.64/.76	.45/.50	.40/.42	.30/.32	.20/.23	.11/.13	1113	1113	680	350	0	0
38000	.91/.96	.70/.85	.62/.75	.45/.50	.40/.42	.30/.32	.20/.22	.11/.13	1113	1113	712	366	0	0
40000	.90/.95	.69/.84	.61/.75	.44/.50	.40/.42	.30/.32	.20/.22	.11/.13	1113	1113	743	380	0	0
42000	.88/.95	.67/.83	.60/.74	.43/.49	.40/.42	.30/.32	.20/.22	.11/.13	1113	1113	775	396	0	0
44000	.86/.94	.65/.82	.58/.73	.43/.49	.40/.42	.30/.32	.20/.22	.11/.13	1113	1113	806	410	0	0
46000	.84/.94	.63/.81	.57/.72	.42/.49	.40/.42	.30/.32	.20/.22	.11/.13	1113	1113	839	426	0	0
48000	.82/.93	.62/.80	.55/.72	.42/.49	.40/.42	.30/.32	.20/.22	.11/.13	1113	1113	870	440	0	0
50000	.79/.92	.60/.80	.54/.71	.41/.48	.40/.42	.30/.32	.20/.22	.11/.13	1113	1113	902	455	0	0
52000	.77/.92	.58/.79	.52/.70	.41/.48	.39/.42	.30/.32	.20/.22	.11/.13	1113	1113	934	470	0	0
54000	.74/.91	.57/.78	.51/.69	.41/.48	.38/.42	.30/.32	.20/.22	.11/.13	1113	1113	966	485	0	0
56000	.71/.90	.55/.77	.50/.69	.40/.47	.37/.41	.30/.32	.20/.22	.11/.13	1113	1113	998	500	0	0
58000	.70/.89	.54/.76	.49/.68	.40/.47	.37/.41	.30/.32	.20/.22	.11/.13	1113	1113	1030	508	0	0
60000	.67/.89	.52/.76	.48/.68	.40/.47	.36/.41	.30/.32	.20/.22	.11/.13	1113	1113	1031	519	0	0

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

UNWARNED EXPOSED				WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT ASLT HEL	OV-1B CARGO HEL	FOREST BLOWDOWN DECID CONIF	WILDLAND FIRES CLASS I CLASS IV		
RANGE	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	HEL	HEL	I	IV
22000	10500	9700	6200	5900	5600	4600	4400	4000	2200	1300	5400	9000	9300	8700	2800	2200	6700	4500
24000	10600	9800	6300	6000	5600	4700	4500	4100	2300	1400	5400	9000	9300	8700	2800	2200	6700	4500
26000	10700	9800	6400	6100	5700	4700	4500	4100	2400	1400	5400	9000	9300	8700	2900	2200	6700	4500
28000	10700	9900	6400	6100	5800	4800	4600	4200	2400	1400	5400	9000	9300	8700	2900	2200	6700	4500
30000	10800	9900	6500	6200	5800	4900	4700	4200	2500	1400	5400	9000	9300	8700	2900	2300	6700	4500
32000	10900	10000	6500	6200	5900	4900	4700	4300	2500	1400	5400	9000	9300	8700	2900	2300	6700	4500
34000	10900	10100	6600	6300	5900	5000	4800	4400	2600	1400	5400	9000	9300	8700	3000	2300	6700	4500
36000	11000	10100	6700	6400	6000	5100	4900	4400	2700	1500	5300	9000	9300	8700	3000	2300	6700	4600
38000	11100	10200	6700	6400	6100	5100	4900	4500	2700	1500	5400	9000	9300	8700	3000	2300	6700	4600
40000	11100	10200	6800	6500	6100	5200	5000	4500	2800	1500	5400	9000	9300	8700	3000	2400	6700	4600
42000	11200	10300	6800	6600	6200	5200	5000	4600	2800	1500	5400	9000	9300	8700	3000	2400	6700	4600
44000	11200	10400	6900	6600	6300	5300	5100	4700	2900	1500	5400	9000	9300	8700	3000	2400	6700	4600
46000	11300	10400	7000	6700	6300	5400	5200	4700	3000	1500	5500	9000	9300	8700	3100	2400	6700	4600
48000	11300	10500	7000	6700	6400	5400	5200	4800	3000	1600	5500	9000	9300	8700	3100	2400	6700	4700
50000	11400	10600	7100	6800	6400	5500	5300	4900	3100	1600	5500	9000	9300	8700	3100	2400	6700	4700
52000	11500	10600	7200	6900	6500	5500	5300	4900	3200	1600	5500	9000	9300	8700	3100	2500	6700	4700
54000	11500	10700	7200	6900	6600	5600	5400	5000	3200	1600	5500	9000	9300	8700	3100	2500	6700	4700
56000	11600	10700	7300	7000	6600	5700	5500	5000	3300	1600	5600	9000	9300	8700	3100	2500	6700	4700
58000	11600	10800	7300	7000	6600	5700	5500	5100	3300	1600	5600	9000	9300	8700	3200	2500	6700	4800
60000	11600	10800	7300	7000	6700	5700	5500	5100	3300	1600	5600	9000	9300	8700	3200	2500	6700	4800

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

A FALLOUT PREDICTION SHOULD BE MADE

GUIDED MISSILE
10 KT
(9-80)

COVERAGE TABLE
(Distances in meters)

P E R S O N N E L I N T A N K S - I M M E D I A T E P E R M A N E N T
S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	300	450	600	800	1050	1400	2000						
50-150 Km	.04/.65	.08/.62	.14/.57	.18/.51	.21/.42	.21/.32	.19/.22	.10/.12	637	637	911	500	0	0

COVERAGE TABLE
(Distances in meters)

P E R S O N N E L I N T A N K S - I M M E D I A T E T R A N S I E N T
S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	500	700	1000	1200	1500	1800	2500						
50-150 Km	.27/.80	.33/.71	.33/.63	.31/.50	.30/.41	.25/.30	.20/.22	.10/.12	805	805	911	500	0	0

GUIDED MISSILE
10 KT
(9-80)

COVERAGE TABLE
 (Distances in meters)

P E R S O N N E L I N T A N K S - L A T E N T L E T H A L I T Y
S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	350	600	1500	1700	2000	2400	3600						
50-150 Km	.78/.92	.71/.90	.62/.85	.41/.50	.36/.41	.30/.32	.25/.22	.06/.08	1090	1090	911	500	0	0

SAFETY DISTANCE TABLE
 (Distances in meters)

T R O O P S A F E T Y (M S D) ----- P R E C L U D E (L S D) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD FIXED	LT DAM	LT DAM	LT ACFT OBSN	IN FLIGHT OV-1B	FOREST BLOWDOWN	WILDLAND FIRES	CLASS	CLASS
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	DECID CONIF	I	IV	
50-150 Km	8600	8100	5700	5600	5300	4500	4500	4100	2800	1400	4700	7300	7600	6500	2400	2000	5500	3800

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

A FALLOUT PREDICTION SHOULD BE MADE

GUIDED MISSILE

50 KT
(11-159)

COVERAGE TABLE
(Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE PERMANENT
SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	450	700	900	1100	1400	1700	2500						
50-150 Km	.22/.78	.30/.71	.31/.61	.31/.52	.29/.43	.25/.31	.20/.22	.10/.12	784	784	911	500	0	0

COVERAGE TABLE
(Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE TRANSIENT
SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	500	1000	1250	1500	1700	2200	3100						
50-150 Km	.60/.88	.52/.82	.42/.63	.38/.51	.33/.40	.30/.32	.20/.22	.10/.12	960	964	911	500	0	0

A FALLOUT PREDICTION SHOULD BE MADE

GUIDED MISSILE

50 KT

(11-159)

COVERAGE TABLE

(Distances in meters)

PERSONNEL IN TANKS - LATENT LETHALITY

SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD(90)	CEP	HOB	PEH
	100	500	750	1700	2000	2300	2800	4000						
50-150 Km	.90/.96	.80/.92	.71/.88	.45/.53	.38/.42	.30/.32	.20/.22	.11/.13	1263	1263	911	500	0	0

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD)										PRECLUDE (LSD)									
UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD	LT	LT ACFT IN FLIGHT				WILDLAND FIRES				
											DAM	DAM	OBSN	OV-1B	FOREST	BLOWDOWN		CLASS CLASS	
RANGE	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	DECID	CONIF	I	IV	
50-150 Km	10900	15600	9900	9100	6500	6900	6000	5800	3300	2000	7400	12700	12900	12700	4300	3500	10000	6500	

A FALLOUT PREDICTION SHDULD BE MADE

GUIDED MISSILE
100 KT
(11-218)

COVERAGE TABLE
(Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE PERMANENT SURFACE BURST														
RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	700	900	1100	1400	1600	2000	2900						
50-150 Km	.47/.85	.41/.71	.39/.62	.36/.53	.32/.40	.28/.32	.20/.22	.10/.12	900	900	911	500	0	3

COVERAGE TABLE
(Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE TRANSIENT SURFACE BURST														
RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	400	700	1500	1700	2000	2400	3500						
50-150 Km	.78/.92	.69/.89	.59/.83	.41/.50	.36/.41	.30/.32	.20/.22	.10/.13	1093	1093	911	500	0	6

GUIDED MISSILE
100 KT
(11-218)

COVERAGE TABLE
 (Distances in meters)

P E R S O N N E L I N T A N K S - L A T E N T L E T H A L I T Y
 S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	400	700	1000	2000	2200	2400	3200	4300						
50-150 Km	.91/.96	.82/.93	.72/.87	.45/.50	.40/.42	.30/.32	.20/.22	.11/.13	1411	1411	911	500	0	3

SAFETY DISTANCE TABLE
 (Distances in meters)

T R O O P S A F E T Y (M S D) ----- P R E C L U D E (L S D) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM BLDG	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT	CARGO HEL	BLOWDOWN DECID	FOREST CONIF	WILDLAND FIRES CLASS	CLASS
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	DECID	CONIF	I	IV
50-150 Km	23300	21600	14000	12500	11600	9000	8000	7200	3900	2600	9700	16900	16900	16900	5500	4600	14500	9000

A FALLOUT PREDICTION SHOULD BE MADE

MARK 50 BOMB

COVERAGE TABLE (Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE PERMANENT SURFACE BURST

		EFFECTIVENESS								PROB		ACCURACY DATA			
YIELD		RADIUS OF TARGET								MIN	EXPT				
		200	400	500	700	825	900	1100	1400	RD	RD	CD/90	CEP	HOB	PEH
3 KT [7-46]		.95/.97	.85/.91	.73/.80	.50/.52	.35/.37	.30/.32	.21/.23	.11/.13	493	493	182	100	0	0
		.57/.85	.47/.73	.44/.64	.37/.46	.32/.36	.29/.32	.20/.22	.10/.13	493	493	455	250	0	0
		.01/.47	.03/.42	.05/.39	.10/.32	.12/.28	.13/.25	.14/.20	.10/.12	493	493	911	500	0	0
		.00/.26	.00/.25	.00/.24	.01/.21	.02/.19	.02/.18	.04/.16	.06/.11	493	493	1366	750	0	0
10 KT [9-80]		.95/.97	.86/.91	.76/.82	.50/.52	.40/.42	.31/.33	.21/.23	.11/.13	637	637	182	100	0	0
		.70/.88	.60/.78	.55/.70	.43/.49	.39/.42	.30/.32	.20/.22	.11/.13	637	637	455	250	0	0
		.12/.59	.16/.53	.19/.49	.21/.39	.21/.35	.21/.29	.18/.21	.10/.12	637	637	911	500	0	0
		.01/.37	.02/.35	.02/.33	.04/.28	.06/.26	.07/.23	.10/.19	.10/.12	637	637	1366	750	0	0
100 KT [11-218]		.95/.97	.81/.85	.70/.72	.50/.52	.41/.43	.31/.33	.21/.23	.11/.13	900	900	182	100	0	0
		.84/.93	.67/.77	.59/.68	.48/.52	.40/.42	.30/.32	.21/.23	.11/.13	900	900	455	250	0	0
		.42/.75	.39/.62	.37/.55	.34/.46	.32/.40	.28/.32	.20/.22	.10/.12	900	900	911	500	0	0
		.09/.55	.15/.47	.17/.43	.18/.38	.19/.34	.19/.28	.14/.22	.10/.12	900	900	1366	750	0	0

COVERAGE TABLE (Distances in meters)

PERSONNEL IN TANKS - IMMEDIATE TRANSIENT SURFACE BURST

		EFFECTIVENESS								PROB		ACCURACY DATA			
YIELD		RADIUS OF TARGET								MIN	EXPT				
		400	600	700	900	1000	1100	1300	1700	RD	RD	CD/90	CEP	HOB	PEH
3 KT [7-46]		.95/.97	.81/.86	.73/.76	.50/.52	.40/.42	.31/.33	.21/.23	.11/.13	635	635	182	100	0	0
		.70/.87	.57/.74	.52/.66	.43/.49	.38/.42	.30/.32	.20/.22	.11/.13	635	635	455	250	0	0
		.12/.59	.18/.51	.19/.47	.21/.39	.21/.35	.21/.29	.20/.22	.10/.12	635	635	911	500	0	0
		.01/.37	.02/.34	.03/.32	.04/.28	.06/.26	.07/.23	.09/.19	.10/.12	635	635	1366	750	0	0
10 KT [9-80]		.95/.97	.81/.85	.70/.72	.50/.52	.41/.43	.31/.33	.21/.23	.11/.13	805	805	182	100	0	0
		.79/.90	.64/.76	.56/.66	.46/.51	.40/.42	.30/.32	.20/.22	.11/.13	805	805	455	250	0	0
		.33/.69	.33/.59	.32/.52	.30/.43	.28/.38	.25/.30	.20/.22	.10/.12	805	805	911	500	0	0
		.04/.48	.08/.43	.11/.39	.14/.34	.15/.31	.16/.26	.16/.21	.10/.12	805	805	1366	750	0	0
100 KT [11-218]		.95/.97	.82/.86	.70/.72	.50/.52	.41/.43	.31/.33	.21/.23	.11/.13	1093	1093	182	100	0	0
		.86/.93	.71/.80	.64/.70	.50/.52	.40/.42	.30/.32	.21/.23	.11/.13	1093	1093	455	250	0	0
		.56/.79	.48/.67	.46/.61	.40/.48	.36/.41	.30/.32	.20/.22	.11/.13	1093	1093	911	500	0	0
		.25/.63	.27/.55	.27/.50	.27/.42	.26/.37	.24/.30	.20/.22	.10/.12	1093	1093	1366	750	0	0

MARK 50 BOMB

COVERAGE TABLE (Distances in meters)

PERSONNEL IN TANKS - LATENT LETHALITY SURFACE BURST

YIELD	EFFECTIVENESS RADIUS OF TARGET								PROB MIN RD	EXPT RD	ACCURACY DATA			
	600	900	1000	1250	1400	1600	1800	2400			CD/90	CEP	HOB	PEH
3 KT [7-46]	.95/.97	.80/.82	.70/.72	.50/.52	.41/.43	.31/.33	.21/.23	.11/.13	881	881	182	100	0	0
	.83/.92	.65/.76	.60/.68	.47/.51	.40/.42	.30/.32	.21/.23	.11/.13	881	881	455	250	0	0
	.41/.73	.38/.60	.36/.56	.33/.45	.31/.39	.27/.31	.20/.22	.10/.12	881	881	911	500	0	0
	.08/.53	.14/.46	.16/.43	.18/.37	.18/.33	.19/.28	.14/.21	.10/.12	881	881	1366	750	0	0
10 KT [9-80]	.95/.97	.81/.86	.70/.72	.50/.52	.41/.43	.31/.33	.21/.23	.11/.13	1090	1090	182	100	0	0
	.86/.93	.71/.79	.64/.70	.50/.52	.40/.42	.30/.32	.21/.23	.11/.13	1090	1090	455	250	0	0
	.56/.79	.48/.67	.45/.60	.40/.48	.35/.41	.30/.32	.20/.22	.11/.13	1090	1090	911	500	0	0
	.25/.63	.27/.55	.27/.50	.27/.41	.26/.36	.23/.30	.20/.22	.10/.12	1090	1090	1366	750	0	0
100 KT [11-218]	.95/.97	.80/.82	.70/.72	.51/.53	.41/.43	.31/.33	.21/.23	.11/.13	1411	1411	182	100	0	0
	.91/.95	.73/.79	.68/.72	.50/.52	.40/.42	.31/.33	.21/.23	.11/.13	1411	1411	455	250	0	0
	.72/.87	.57/.70	.54/.65	.45/.50	.40/.42	.30/.32	.20/.22	.11/.13	1411	1411	911	500	0	0
	.45/.75	.41/.61	.39/.57	.35/.46	.33/.40	.29/.32	.20/.22	.10/.12	1411	1411	1366	750	0	0

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

YIELD	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO BLDG	LT OBSN UTIL HEL	LT ACFT IN FLIGHT OV-10 ASLT	IN FLIGHT CARGO HEL	FOREST BLOWDOWN DECID CONIF	WILDLAND FIRES CLASS I	WILDLAND FIRES CLASS IV
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	HEL	HEL	HEL
3 KT [7-46]	4400	4100	2600	2700	2500	1900	2200	2000	1400*	700	2800	4500	4900	3400	1400	1000	1900
	4800	4500	3000	3000	2800	2300	2600	2400	1800*	800	2900	4500	4900	3400	1500	1200	2000
	5400	5100	3700	3700	3500	3000	3200	3000	2500*	900	3100	4700	5000	3600	1800	1400	2200
	6100	5800	4300	4400	4200	3600	3300	3700	3100*	900	3400	4900	5200	3900	1600	1500	2400
10 KT [9-80]	7500	7000	4600	4500	4200	3400	3300	3000	1700*	1100	4500	7300	7700	6500	2200	1600	3400
	7900	7400	5000	4900	4600	3800	3700	3400	2100*	1200	4500	7300	7700	6500	2300	1800	3500
	8600	8100	5700	5600	5300	4500	4500	4100	2800*	1400	4700	7300	7600	6500	2600	2000	3800
	9400	8800	6400	6300	6000	5200	5200	4800	3500*	1600	4900	7600	7900	6800	2800	2200	4100
100 KT [11-218]	22100	20500	12900	11400	10500	7900	6800	6100	2800	2300	9700	16900	16900	16900	5400	4400	14500
	22600	20900	13300	11800	10900	8300	7300	6500	3200	2400	9700	16900	16900	16900	5400	4400	14500
	23500	21600	14000	12500	11600	9000	8000	7200	3900	2600	9700	16900	16900	16900	5500	4600	14500
	24000	22300	14700	13200	12300	9700	8700	7900	4600	2900	9800	16900	16900	16900	5800	4800	14500

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

A FALLOUT PREDICTION SHOULD BE MADE

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CHAPTER 11
COVERAGE AND SAFETY TABLES FOR
SURFACE BURST
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FREE FLIGHT ROCKET

5 KT

(8-59)

COVERAGE TABLE

(Distances in meters)

MODERATE DAMAGE TO TANKS SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	25	50	75	100	275	400	500	800						
22000	.00/.52	.01/.52	.01/.51	.02/.51	.08/.40	.14/.31	.15/.24	.10/.12	25a	258	461	246	n	0
24000	.00/.48	.00/.48	.00/.48	.01/.47	.05/.38	.11/.30	.13/.23	.10/.12	25a	258	493	262	n	0
26000	.00/.45	.00/.45	.00/.44	.00/.44	.04/.36	.09/.28	.12/.22	.10/.12	25a	258	523	276	n	0
28000	.00/.42	.00/.42	.00/.41	.00/.41	.03/.34	.07/.27	.10/.22	.10/.12	25a	258	555	292	n	0
30000	.00/.39	.00/.39	.00/.39	.00/.38	.02/.32	.05/.26	.08/.21	.10/.12	25a	258	586	306	n	0
32000	.00/.36	.00/.36	.00/.36	.00/.35	.02/.30	.04/.25	.07/.20	.10/.12	25a	258	618	321	n	0
34000	.00/.34	.00/.34	.00/.34	.00/.33	.01/.29	.03/.24	.06/.20	.09/.12	25a	258	649	336	n	0
36000	.00/.32	.00/.32	.00/.31	.00/.31	.01/.27	.03/.23	.05/.19	.08/.12	25a	258	680	350	n	0
38000	.00/.30	.00/.30	.00/.29	.00/.29	.00/.26	.02/.22	.04/.18	.07/.11	25a	258	712	366	n	0
40000	.00/.28	.00/.28	.00/.28	.00/.27	.00/.24	.02/.20	.03/.18	.07/.11	25a	258	743	380	n	0
42000	.00/.26	.00/.26	.00/.26	.00/.26	.00/.23	.01/.20	.02/.17	.06/.11	25a	258	775	396	n	0
44000	.00/.24	.00/.25	.00/.24	.00/.24	.00/.22	.01/.19	.02/.16	.06/.11	25a	258	806	410	n	0
46000	.00/.23	.00/.23	.00/.23	.00/.23	.00/.21	.01/.18	.02/.16	.05/.11	25a	258	839	426	n	0
48000	.00/.22	.00/.22	.00/.22	.00/.22	.00/.20	.00/.17	.01/.15	.05/.11	25a	258	870	440	n	0
50000	.00/.20	.00/.21	.00/.20	.00/.20	.00/.19	.00/.17	.01/.15	.04/.10	25a	258	902	455	n	0
52000	.00/.19	.00/.19	.00/.19	.00/.19	.00/.18	.00/.16	.01/.14	.04/.10	25a	258	934	470	n	0
54000	.00/.18	.00/.18	.00/.18	.00/.18	.00/.17	.00/.15	.00/.14	.03/.10	25a	258	966	485	n	0
56000	.00/.17	.00/.17	.00/.17	.00/.17	.00/.16	.00/.15	.00/.13	.03/.10	25a	258	998	500	n	0
58000	.00/.17	.00/.17	.00/.17	.00/.17	.00/.16	.00/.14	.00/.13	.03/.10	25a	258	1010	508	n	0
60000	.00/.16	.00/.16	.00/.16	.00/.16	.00/.15	.00/.14	.00/.13	.02/.09	25a	258	1031	519	n	0

COVERAGE TABLE

(Distances in meters)

MODERATE DAMAGE TO WHEELED VEHICLES SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	50	200	300	475	600	700	900	1100						
22000	.29/.80	.32/.75	.33/.68	.32/.52	.30/.41	.26/.31	.20/.22	.10/.12	400	400	461	246	0	0
24000	.18/.77	.26/.71	.29/.65	.29/.50	.28/.40	.25/.31	.20/.22	.10/.12	400	400	493	262	0	0
26000	.11/.73	.20/.69	.25/.62	.27/.49	.26/.39	.24/.30	.20/.22	.10/.12	400	400	523	276	0	0
28000	.06/.70	.15/.66	.20/.60	.24/.47	.24/.38	.22/.30	.19/.22	.10/.12	400	400	555	292	0	0
30000	.04/.67	.10/.63	.16/.57	.21/.46	.22/.37	.21/.29	.18/.22	.10/.12	400	400	586	306	0	0
32000	.03/.64	.07/.60	.13/.55	.19/.44	.20/.36	.20/.29	.14/.21	.10/.12	400	400	618	321	0	0
34000	.02/.61	.05/.57	.10/.53	.17/.43	.19/.35	.19/.28	.17/.21	.10/.12	400	400	649	336	0	0
36000	.01/.58	.04/.55	.07/.51	.15/.41	.17/.34	.18/.28	.16/.21	.10/.12	400	400	680	350	0	0
38000	.01/.55	.03/.52	.05/.48	.12/.40	.15/.33	.16/.27	.16/.21	.10/.12	400	400	712	366	0	0
40000	.00/.53	.02/.50	.04/.46	.10/.38	.14/.32	.15/.27	.15/.21	.10/.12	400	400	743	380	0	0
42000	.00/.50	.02/.48	.03/.44	.08/.37	.12/.32	.14/.26	.15/.20	.10/.12	400	400	775	396	0	0
44000	.00/.48	.01/.46	.03/.43	.07/.36	.11/.31	.12/.26	.14/.20	.10/.12	400	400	806	410	0	0
46000	.00/.45	.01/.43	.02/.41	.05/.35	.09/.30	.11/.25	.13/.20	.10/.12	400	400	839	426	0	0
48000	.00/.43	.01/.42	.02/.39	.04/.33	.08/.29	.10/.24	.12/.19	.10/.12	400	400	870	440	0	0
50000	.00/.41	.00/.40	.01/.37	.04/.32	.06/.28	.09/.24	.11/.19	.10/.12	400	400	902	455	0	0
52000	.00/.40	.00/.38	.01/.36	.03/.31	.05/.27	.07/.23	.10/.19	.10/.12	400	400	934	470	0	0
54000	.00/.38	.00/.36	.01/.34	.03/.30	.04/.26	.06/.23	.10/.18	.10/.12	400	400	966	485	0	0
56000	.00/.36	.00/.35	.00/.33	.02/.29	.04/.26	.05/.22	.09/.18	.10/.12	400	400	998	500	0	0
58000	.00/.35	.00/.34	.00/.32	.02/.28	.03/.25	.05/.22	.08/.18	.10/.12	400	400	1010	508	0	0
60000	.00/.34	.00/.33	.00/.31	.02/.28	.03/.25	.04/.21	.08/.18	.09/.12	400	400	1031	519	0	0

FREE FLIGHT ROCKET

COVERAGE TABLE (Distances in meters)

5 KT
(8-59)

MODERATE DAMAGE TO TOWED ARTILLERY SURFACE BURST

RANGE	EFFECTIVENESS RADIUS OF TARGET								PROB MIN RD	EXPT RD	ACCURACY DATA			
	50	100	200	300	400	500	600	800			CD/90	CEP	HOB	PEH
22000	.00/.50	.01/.49	.04/.44	.09/.37	.13/.30	.15/.23	.14/.17	.10/.12	250	250	461	246	0	0
24000	.00/.46	.01/.45	.03/.41	.06/.35	.11/.29	.13/.22	.13/.17	.10/.12	250	250	493	262	0	0
26000	.00/.43	.00/.42	.02/.38	.04/.33	.08/.27	.11/.22	.12/.16	.10/.12	250	250	523	276	0	0
28000	.00/.40	.00/.39	.01/.36	.03/.31	.06/.26	.09/.21	.11/.16	.10/.12	250	250	555	292	0	0
30000	.00/.37	.00/.36	.01/.33	.03/.29	.05/.25	.08/.20	.10/.16	.10/.12	250	250	586	306	0	0
32000	.00/.34	.00/.34	.00/.31	.02/.28	.04/.24	.06/.20	.08/.15	.09/.12	250	250	618	321	0	0
34000	.00/.32	.00/.32	.00/.29	.01/.26	.03/.23	.05/.19	.07/.15	.08/.12	250	250	649	336	0	0
36000	.00/.30	.00/.30	.00/.28	.01/.25	.02/.22	.04/.18	.06/.15	.07/.11	250	250	680	350	0	0
38000	.00/.28	.00/.28	.00/.26	.01/.24	.02/.21	.03/.18	.05/.14	.07/.11	250	250	712	366	0	0
40000	.00/.26	.00/.26	.00/.25	.00/.22	.01/.20	.03/.17	.04/.14	.06/.11	250	250	743	380	0	0
42000	.00/.25	.00/.24	.00/.23	.00/.21	.01/.19	.02/.16	.04/.13	.06/.11	250	250	775	396	0	0
44000	.00/.23	.00/.23	.00/.22	.00/.20	.01/.18	.02/.16	.03/.13	.06/.11	250	250	806	410	0	0
46000	.00/.22	.00/.22	.00/.21	.00/.19	.00/.17	.01/.15	.03/.13	.05/.11	250	250	839	426	0	0
48000	.00/.21	.00/.20	.00/.20	.00/.18	.00/.17	.01/.15	.02/.12	.05/.10	250	250	870	440	0	0
50000	.00/.19	.00/.19	.00/.19	.00/.17	.00/.16	.01/.14	.02/.12	.04/.10	250	250	902	455	0	0
52000	.00/.18	.00/.18	.00/.18	.00/.17	.00/.15	.01/.14	.01/.12	.03/.10	250	250	934	470	0	0
54000	.00/.17	.00/.17	.00/.17	.00/.16	.00/.15	.00/.13	.01/.11	.03/.10	250	250	966	485	0	0
56000	.00/.17	.00/.16	.00/.16	.00/.15	.00/.14	.00/.13	.01/.11	.03/.09	250	250	998	500	0	0
58000	.00/.16	.00/.16	.00/.16	.00/.15	.00/.14	.00/.12	.01/.11	.02/.09	250	250	1010	508	0	0
60000	.00/.15	.00/.15	.00/.15	.00/.14	.00/.13	.00/.12	.01/.10	.02/.09	250	250	1031	519	0	0

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED BRG	LT DAM TO BLDG	LT ACFT OBSN UTIL HEL	IN FLIGHT OV-10 ASLT CARGO HEL				FOREST BLOWDOWN DECID CONIF		WILDLAND FIRES CLASS CLASS	
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER				HEL	HEL	HEL	HEL	DECID	CONIF	I	IV
22000	6000	5700	4000	3900	3700	3000	3200	2900	2100	1000	3500	5600	6000	4500	1000	1400	4000	2600		
24000	6100	5700	4000	4000	3700	3100	3200	3000	2200	1000	3500	5600	6000	4500	1000	1400	4000	2600		
26000	6200	5800	4100	4100	3800	3100	3300	3000	2200	1000	3500	5600	6000	4400	1000	1400	4000	2600		
28000	6200	5900	4200	4100	3900	3200	3400	3100	2300	1000	3600	5600	6000	4400	1000	1500	4000	2700		
30000	6300	5900	4200	4200	3900	3300	3400	3100	2300	1000	3600	5600	6000	4400	1000	1500	4000	2700		
32000	6300	6000	4300	4200	4000	3300	3500	3200	2400	1000	3600	5600	6000	4500	2000	1500	4100	2700		
34000	6400	6100	4300	4300	4100	3400	3600	3300	2500	1000	3600	5600	6000	4500	2000	1500	4100	2700		
36000	6500	6100	4400	4400	4100	3500	3600	3300	2500	1000	3600	5600	6000	4500	2000	1500	4100	2700		
38000	6500	6200	4500	4400	4200	3500	3700	3400	2600	1100	3600	5600	6000	4500	2000	1600	4100	2700		
40000	6600	6300	4500	4500	4200	3600	3700	3500	2700	1100	3700	5600	6000	4500	2000	1600	4100	2800		
42000	6700	6300	4600	4600	4300	3600	3800	3500	2700	1100	3700	5600	6000	4600	2000	1600	4200	2800		
44000	6700	6400	4700	4600	4400	3700	3900	3600	2800	1100	3700	5700	6000	4600	2100	1600	4200	2800		
46000	6800	6400	4700	4700	4400	3800	3900	3700	2800	1100	3700	5700	6000	4600	2100	1600	4200	2800		
48000	6800	6500	4800	4700	4500	3800	4000	3700	2900	1100	3700	5700	6100	4600	2100	1600	4200	2800		
50000	6900	6600	4800	4800	4600	3900	4100	3800	3000	1100	3700	5700	6100	4600	2100	1600	4200	2800		
52000	7000	6600	4900	4900	4600	4000	4100	3800	3000	1100	3700	5800	6100	4600	2100	1700	4200	2900		
54000	7000	6700	5000	4900	4700	4000	4200	3900	3100	1100	3800	5800	6100	4700	2100	1700	4200	2900		
56000	7100	6800	5000	5000	4700	4100	4200	4000	3200	1100	3800	5800	6100	4700	2200	1700	4300	2900		
58000	7100	6800	5000	5000	4800	4100	4300	4000	3200	1100	3800	5800	6100	4700	2200	1700	4300	2900		
60000	7200	6800	5100	5100	4800	4100	4300	4000	3200	1100	3800	5800	6200	4700	2200	1700	4300	2900		

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

A FALLOUT PREDICTION SHOULD BE MADE

FREE FLIGHT ROCKET

20 KT

(9-105)

COVERAGE TABLE

(Distances in meters)

MODERATE DAMAGE TO TANKS SURFACE BURST

EFFECTIVENESS									PROB	ACCURACY DATA				
RANGE	RADIUS OF TARGET								MIN	EXPT	CD/90	CEP	HOB	PEH
	25	100	300	500	600	800	1000	1200	RD	RD				
22000	.48/.86	.48/.84	.42/.74	.38/.57	.35/.48	.28/.31	.20/.22	.10/.12	445	445	461	246	0	0
24000	.34/.83	.36/.81	.37/.72	.35/.56	.33/.47	.26/.31	.20/.22	.10/.12	445	445	493	262	0	0
26000	.26/.80	.31/.79	.33/.69	.32/.54	.31/.46	.26/.31	.20/.22	.10/.12	445	445	523	276	0	0
28000	.17/.77	.21/.76	.28/.67	.29/.52	.29/.45	.24/.30	.20/.22	.10/.12	445	445	555	292	0	0
30000	.11/.74	.13/.73	.24/.64	.27/.51	.27/.44	.23/.30	.20/.22	.10/.12	445	445	586	306	0	0
32000	.07/.71	.09/.70	.19/.62	.24/.49	.25/.42	.22/.30	.20/.22	.10/.12	445	445	618	321	0	0
34000	.04/.68	.06/.67	.16/.60	.22/.48	.23/.41	.21/.29	.19/.22	.10/.12	445	445	649	336	0	0
36000	.03/.65	.04/.64	.13/.57	.20/.46	.21/.40	.21/.29	.19/.22	.10/.12	445	445	680	350	0	0
38000	.02/.62	.03/.62	.10/.55	.17/.45	.19/.39	.20/.28	.17/.21	.10/.12	445	445	712	366	0	0
40000	.01/.60	.03/.59	.07/.53	.15/.43	.17/.38	.18/.28	.17/.21	.10/.12	445	445	743	380	0	0
42000	.01/.57	.02/.57	.05/.51	.13/.42	.15/.37	.17/.27	.16/.21	.10/.12	445	445	775	396	0	0
44000	.00/.55	.01/.54	.04/.49	.11/.41	.14/.36	.16/.27	.16/.21	.10/.12	445	445	806	410	0	0
46000	.00/.52	.01/.52	.03/.47	.09/.39	.12/.35	.15/.26	.15/.20	.10/.12	445	445	839	426	0	0
48000	.00/.50	.00/.50	.03/.45	.07/.38	.10/.34	.14/.26	.15/.20	.10/.12	445	445	870	440	0	0
50000	.00/.48	.00/.48	.02/.43	.06/.37	.09/.33	.12/.25	.14/.20	.10/.12	445	445	902	455	0	0
52000	.00/.46	.00/.46	.02/.42	.05/.36	.07/.32	.11/.25	.13/.20	.10/.12	445	445	934	470	0	0
54000	.00/.44	.00/.44	.02/.40	.04/.35	.06/.31	.10/.24	.12/.19	.10/.12	445	445	966	485	0	0
56000	.00/.42	.00/.42	.01/.39	.03/.33	.05/.30	.09/.24	.11/.19	.10/.12	445	445	998	500	0	0
58000	.00/.41	.00/.41	.01/.38	.03/.33	.05/.30	.09/.24	.11/.19	.10/.12	445	445	1010	508	0	0
60000	.00/.40	.00/.40	.01/.37	.03/.32	.04/.29	.08/.23	.11/.19	.10/.12	445	445	1031	519	0	0

COVERAGE TABLE

(Distances in meters)

MODERATE DAMAGE TO WHEELED VEHICLES SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	300	500	900	1100	1200	1500	1900						
22000	.94/.97	.85/.94	.71/.86	.47/.56	.39/.42	.30/.32	.20/.22	.11/.13	687	687	461	246	0	0
24000	.91/.96	.81/.93	.67/.85	.46/.55	.38/.42	.30/.32	.20/.22	.11/.13	687	687	493	262	0	0
26000	.88/.95	.77/.92	.64/.83	.45/.55	.37/.41	.30/.32	.20/.22	.11/.13	687	687	523	276	0	0
28000	.84/.94	.73/.90	.61/.82	.44/.54	.36/.41	.30/.32	.20/.22	.11/.13	687	687	555	292	0	0
30000	.80/.93	.69/.89	.58/.80	.42/.53	.36/.41	.30/.32	.20/.22	.11/.13	687	687	586	306	0	0
32000	.74/.91	.65/.87	.55/.79	.41/.53	.35/.40	.30/.32	.20/.22	.11/.13	687	687	618	321	0	0
34000	.68/.90	.60/.86	.51/.77	.40/.52	.34/.40	.30/.32	.20/.22	.10/.13	687	687	649	336	0	0
36000	.62/.88	.55/.84	.48/.76	.38/.51	.33/.40	.30/.32	.20/.22	.10/.13	687	687	680	350	0	0
38000	.55/.87	.50/.83	.45/.74	.37/.50	.32/.39	.30/.32	.20/.22	.10/.12	687	687	712	366	0	0
40000	.47/.85	.46/.81	.42/.73	.35/.50	.31/.39	.29/.32	.20/.22	.10/.12	687	687	743	380	0	0
42000	.41/.83	.40/.79	.39/.71	.34/.49	.30/.39	.28/.32	.20/.22	.10/.12	687	687	775	396	0	0
44000	.34/.81	.36/.77	.36/.70	.32/.48	.30/.38	.27/.31	.20/.22	.10/.12	687	687	806	410	0	0
46000	.29/.79	.31/.76	.33/.68	.31/.47	.28/.38	.26/.31	.20/.22	.10/.12	687	687	839	426	0	0
48000	.22/.78	.27/.74	.30/.66	.30/.47	.27/.37	.26/.31	.20/.22	.10/.12	687	687	870	440	0	0
50000	.17/.76	.23/.72	.28/.65	.28/.46	.26/.37	.25/.31	.20/.22	.10/.12	687	687	902	455	0	0
52000	.13/.74	.20/.70	.25/.63	.27/.45	.26/.36	.24/.30	.20/.22	.10/.12	687	687	934	470	0	0
54000	.09/.72	.17/.68	.22/.62	.26/.44	.25/.36	.23/.30	.20/.22	.10/.12	687	687	966	485	0	0
56000	.07/.70	.14/.67	.20/.60	.24/.43	.24/.36	.22/.30	.20/.22	.10/.12	687	687	998	500	0	0
58000	.06/.69	.12/.66	.19/.60	.24/.43	.23/.35	.22/.30	.20/.22	.10/.12	687	687	1010	508	0	0
60000	.05/.68	.10/.65	.17/.59	.23/.43	.22/.35	.22/.30	.20/.22	.10/.12	687	687	1031	519	0	0

A FALLOUT PREDICTION SHOULD BE MADE

FREE FLIGHT ROCKET

COVERAGE TABLE (Distances in meters)

20 KT
(9-105)

MODERATE DAMAGE TO TOWED ARTILLERY SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	25	100	300	500	600	800	900	1200						
22000	.39/.84	.42/.83	.40/.72	.36/.55	.33/.45	.26/.31	.20/.22	.10/.12	431	431	461	246	0	0
24000	.30/.81	.33/.80	.34/.70	.33/.53	.31/.44	.25/.31	.20/.22	.10/.12	431	431	493	262	0	0
26000	.20/.78	.23/.77	.30/.67	.30/.52	.29/.43	.24/.30	.20/.22	.10/.12	431	431	523	276	0	0
28000	.13/.75	.15/.74	.26/.65	.28/.50	.27/.42	.23/.30	.20/.22	.10/.12	431	431	555	292	0	0
30000	.08/.72	.10/.71	.21/.62	.25/.49	.26/.41	.22/.29	.20/.22	.10/.12	431	431	586	306	0	0
32000	.05/.69	.07/.68	.17/.60	.23/.47	.23/.40	.21/.29	.20/.22	.10/.12	431	431	619	321	0	0
34000	.03/.66	.05/.65	.14/.58	.20/.46	.21/.39	.21/.29	.20/.22	.10/.12	431	431	649	336	0	0
36000	.02/.63	.04/.62	.11/.55	.18/.44	.20/.38	.20/.28	.19/.22	.10/.12	431	431	680	350	0	0
38000	.02/.60	.03/.60	.08/.53	.16/.43	.18/.37	.19/.28	.18/.21	.10/.12	431	431	712	366	0	0
40000	.01/.58	.02/.57	.06/.51	.14/.42	.16/.36	.17/.27	.17/.21	.10/.12	431	431	743	380	0	0
42000	.00/.55	.02/.54	.04/.49	.12/.40	.14/.35	.16/.27	.16/.21	.10/.12	431	431	775	396	0	0
44000	.00/.53	.01/.52	.04/.47	.10/.39	.13/.34	.15/.26	.16/.21	.10/.12	431	431	806	410	0	0
46000	.00/.50	.00/.50	.03/.45	.08/.38	.11/.33	.14/.26	.15/.21	.10/.12	431	431	839	426	0	0
48000	.00/.48	.00/.48	.02/.43	.06/.36	.10/.32	.13/.25	.14/.20	.10/.12	431	431	870	440	0	0
50000	.00/.46	.00/.46	.02/.42	.05/.35	.08/.31	.12/.25	.13/.20	.10/.12	431	431	902	455	0	0
52000	.00/.44	.00/.44	.02/.40	.04/.34	.07/.31	.11/.24	.12/.20	.10/.12	431	431	934	470	0	0
54000	.00/.42	.00/.42	.01/.38	.04/.33	.05/.30	.10/.23	.11/.19	.10/.12	431	431	966	485	0	0
56000	.00/.40	.00/.40	.01/.37	.03/.32	.05/.29	.09/.23	.10/.19	.10/.12	431	431	998	500	0	0
58000	.00/.39	.00/.39	.01/.36	.03/.31	.04/.28	.08/.23	.10/.19	.10/.12	431	431	1010	508	0	0
60000	.00/.38	.00/.38	.01/.35	.03/.30	.04/.28	.07/.22	.09/.19	.10/.12	431	431	1031	519	0	0

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

UNWARNED EXPOSED				WARNED EXPOSED			WARNED PROTECTED			MOD DAM	LT DAM	LT ACFT	IN FLIGHT	FOREST			WILDLAND FIRES	
RANGE	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	FIXED	TO BLDG	OBSN UTIL	ASLT HEL	CARGO HEL	BLOWDOWN DECID	CONIF	CLASS I	CLASS IV
22000	10500	9700	6200	5900	5600	4600	4400	4000	2200	1300	5400	9000	9300	8700	2900	2200	6700	4500
24000	10600	9800	6300	6000	5600	4700	4500	4100	2300	1400	5400	9000	9300	8700	2900	2200	6700	4500
26000	10700	9800	6400	6100	5700	4700	4500	4100	2400	1400	5400	9000	9300	8700	2900	2200	6700	4500
28000	10700	9900	6400	6100	5800	4800	4600	4200	2400	1400	5400	9000	9300	8700	2900	2200	6700	4500
30000	10800	9900	6500	6200	5800	4900	4700	4200	2500	1400	5400	9000	9300	8700	2900	2300	6700	4500
32000	10900	10000	6500	6200	5900	4900	4700	4300	2500	1400	5400	9000	9300	8700	2900	2300	6700	4500
34000	10900	10100	6600	6300	5900	5000	4800	4400	2600	1400	5400	9000	9300	8700	3000	2300	6700	4500
36000	11000	10100	6700	6400	6000	5100	4900	4400	2700	1500	5300	9000	9300	8700	3000	2300	6700	4600
38000	11000	10200	6700	6400	6100	5100	4900	4500	2700	1500	5400	9000	9300	8700	3000	2300	6700	4600
40000	11100	10200	6800	6500	6100	5200	5000	4500	2800	1500	5400	9000	9300	8700	3000	2400	6700	4600
42000	11200	10300	6800	6600	6200	5200	5000	4600	2800	1500	5400	9000	9300	8700	3000	2400	6700	4600
44000	11200	10400	6900	6600	6300	5300	5100	4700	2900	1500	5400	9000	9300	8700	3000	2400	6700	4600
46000	11300	10400	7000	6700	6300	5400	5200	4700	3000	1500	5500	9000	9300	8700	3100	2400	6700	4700
48000	11300	10500	7000	6700	6400	5400	5200	4800	3000	1600	5500	9000	9300	8700	3100	2400	6700	4700
50000	11400	10600	7100	6800	6400	5500	5300	4900	3100	1600	5500	9000	9300	8700	3100	2400	6700	4700
52000	11500	10600	7200	6900	6500	5500	5300	4900	3200	1600	5500	9000	9300	8700	3100	2500	6700	4700
54000	11500	10700	7200	6900	6600	5600	5400	5000	3200	1600	5500	9000	9300	8700	3100	2500	6700	4700
56000	11600	10700	7300	7000	6600	5700	5500	5000	3300	1600	5600	9000	9300	8700	3100	2500	6700	4700
58000	11600	10800	7300	7000	6600	5700	5500	5100	3300	1600	5600	9000	9300	8700	3200	2500	6700	4800
60000	11600	10800	7300	7000	6700	5700	5500	5100	3300	1600	5600	9000	9300	8700	3200	2500	6700	4800

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

A FALLOUT PREDICTION SHOULD BE MADE

GUIDED MISSILE
10 KT
(9-80)

COVERAGE TABLE
 (Distances in meters)

M O D E R A T E D A M A G E T O T A N K S
S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	400	500	600	700	800	900	1100						
50-150 Km	.00/.29	.01/.25	.02/.23	.03/.21	.04/.18	.05/.16	.07/.14	.07/.11	351	351	911	500	0	0

COVERAGE TABLE
 (Distances in meters)

M O D E R A T E D A M A G E T O W H E E L E D V E H I C L E S
S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	150	200	300	600	900	1200	1700						
50-150 Km	.01/.55	.02/.54	.02/.53	.03/.51	.11/.41	.16/.30	.16/.21	.10/.12	544	544	911	500	0	0

GUIDED MISSILE

10 KT

(9-80)

COVERAGE TABLE

(Distances in meters)

MODERATE DAMAGE TO TOWED ARTILLERY

SURFACE BURST

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	300	400	500	600	700	800	1000						
50-150 Km	.00/.28	.00/.26	.00/.24	.01/.22	.02/.19	.04/.16	.05/.14	.07/.11	340	340	911	500	0	0

SAFETY DISTANCE TABLE

(Distances in meters)

TROOP SAFETY (MSD)										PRECLUDE (LSD)									
RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT OBSN UTIL	ACFT IN FLIGHT ASLT	OV-10 CARGO HEL	FOREST BLOWDOWN DECID	CONIF	WILDLAND FIRES		
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL			CLASS I	CLASS IV	
50-150 Km	8000	8100	5700	5600	5300	4500	4500	4100	2800	1400	4700	7300	7600	6500	2600	2000	5500	3800	

*Nuclear radiation effects are significant. If troops have history of previous exposure, Consult Figure 15-8 for modification of risk radii.

A FALLOUT PREDICTION SHOULD BE MADE

GUIDED MISSILE
50 KT
(11-159)

COVERAGE TABLE
(Distances in meters)

M O D E R A T E D A M A G E T O T A N K S
S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	400	600	800	1000	1300	1600	2300						
50-150 Km	.10/.73	.20/.57	.25/.59	.26/.51	.26/.42	.23/.30	.20/.22	.10/.12	716	716	911	500	0	0

COVERAGE TABLE
(Distances in meters)

M O D E R A T E D A M A G E T O W H E E L E D V E H I C L E S
S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	300	600	1400	1700	1900	2400	3500						
50-150 Km	.76/.92	.71/.90	.60/.85	.41/.53	.35/.41	.30/.32	.20/.22	.06/.08	1071	1071	911	500	0	0

GUIDED MISSILE
50 KT
(11-159)

COVERAGE TABLE
(Distances in meters)

M O D E R A T E D A M A G E T O T O W E D A R T I L L E R Y
S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	300	500	700	1000	1200	1500	2200						
50-150 Km	.08/.71	.15/.68	.21/.61	.24/.53	.25/.40	.23/.33	.20/.22	.10/.12	696	696	911	500	0	0

SAFETY DISTANCE TABLE
(Distances in meters)

T R O O P S A F E T Y (M S D) ----- P R E C L U D E (L S D) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT OV-1B ASLT	CARGO HEL	FOREST BLOWDOWN DECID	WILDLAND FIRES CONIF	CLASS I	CLASS IV
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	HEL	HEL		
50-150 Km	16900	15600	9900	9100	8500	6900	6400	5800	3300	2000	7400	12700	12900	12700	4300	3500	10000	6500

A FALLOUT PREDICTION SHOULD BE MADE

GUIDED MISSILE
100 KT
(11-218)

COVERAGE TABLE
(Distances in meters)

M O D E R A T E D A M A G E T O T A N K S
S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	500	800	1400	1600	1900	2300	3300						
50-150 Km	.71/.91	.60/.85	.51/.76	.40/.50	.35/.41	.30/.32	.20/.22	.10/.13	1035	1035	911	500	0	3

COVERAGE TABLE
(Distances in meters)

M O D E R A T E D A M A G E T O W H E E L E D V E H I C L E S
S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	600	900	1200	2100	2400	2800	3200	4400						
50-150 Km	.90/.95	.81/.92	.71/.85	.46/.51	.40/.42	.30/.32	.20/.22	.11/.13	1518	1518	911	500	0	0

GUIDED MISSILE

100 KT

(11-218)

COVERAGE TABLE

(Distances in meters)

M O D E R A T E D A M A G E T O T O W E D A R T I L L E R Y

S U R F A C E B U R S T

RANGE	EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
	100	400	700	1300	1600	1800	2300	3300						
50-150 Km	.67/.90	.60/.86	.51/.78	.40/.52	.34/.40	.30/.32	.20/.22	.06/.08	1008	1008	911	500	0	0

SAFETY DISTANCE TABLE

(Distances in meters)

T R O O P S A F E T Y (M S D)

----- P R E C L U D E (L S D) -----

RANGE	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO BLDG	LT OBSN UTIL HEL	ACFT ASLT HEL	IN FLIGHT OV-1B CARGO HEL	FOREST BLOWDOWN DECID CONIF	WILDLAND FIRES CLASS I CLASS IV		
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	HEL	DECID	CONIF		
50-150 Km	23300	21600	14000	12500	11600	9000	8000	7200	3900	2600	9700	16900	16900	16900	5500	4600	14500	9000

A FALLOUT PREDICTIDN SHOULD BE MADE

MARK 50 BOMB

COVERAGE TABLE (Distances in meters)

MODERATE DAMAGE TO TANKS SURFACE BURST

		EFFECTIVENESS								PROB		ACCURACY DATA			
YIELD		RADIUS OF TARGET								MIN	EXPT				
		25	150	200	250	300	350	400	600	RD	RD	CD/90	CEP	HOB	PEH
3 KT [7-46]		.71/.91	.53/.78	.47/.68	.42/.57	.38/.45	.32/.36	.25/.27	.10/.13	207	207	182	100	0	0
		.00/.38	.01/.35	.02/.33	.03/.30	.04/.27	.06/.24	.08/.21	.10/.12	207	207	455	250	0	0
		.00/.12	.00/.12	.00/.11	.00/.11	.00/.11	.00/.10	.00/.10	.00/.08	207	207	911	500	0	0
		.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	207	207	1366	750	0	0
10 KT [9-80]		200	150	300	475	550	650	750	1000						
		.88/.95	.93/.96	.74/.85	.49/.55	.40/.42	.30/.32	.21/.23	.11/.13	351	351	182	100	0	0
		.19/.66	.16/.68	.24/.58	.25/.43	.25/.36	.22/.29	.20/.22	.10/.12	351	351	455	250	0	0
		.00/.28	.00/.29	.00/.27	.11/.23	.02/.22	.03/.19	.05/.17	.07/.11	351	351	911	500	0	0
100 KT [11-218]		.00/.15	.00/.15	.00/.14	.10/.13	.00/.13	.00/.12	.00/.11	.01/.09	351	351	1366	750	0	0
		700	1000	1150	1450	1600	1900	2300	3300						
		.95/.97	.85/.87	.75/.77	.50/.52	.41/.43	.31/.33	.21/.23	.11/.13	1035	1035	182	100	0	0
		.87/.94	.72/.81	.65/.73	.50/.52	.40/.42	.30/.32	.21/.23	.11/.13	1035	1035	455	250	0	0
100 KT [11-218]		.54/.80	.47/.68	.44/.61	.40/.47	.35/.41	.30/.32	.20/.22	.10/.13	1035	1035	911	500	0	0
		.19/.62	.23/.54	.24/.50	.25/.41	.24/.36	.22/.29	.20/.22	.10/.12	1035	1035	1366	750	0	0

COVERAGE TABLE (Distances in meters)

MODERATE DAMAGE TO WHEELED VEHICLES SURFACE BURST

EFFECTIVENESS									PROB MIN RD	EXPT RD	ACCURACY DATA			
YIELD	RADIUS OF TARGET										CD/90	CEP	HOB	PEH
3 KT [7-46]	100	200	250	450	500	550	700	900						
	.94/.96	.81/.92	.74/.86	.46/.51	.40/.42	.30/.32	.20/.22	.11/.13	318	318	182	100	0	
	.05/.64	.12/.59	.15/.55	.21/.39	.21/.35	.21/.29	.19/.22	.10/.12	318	318	455	250	0	
	.00/.25	.00/.24	.00/.24	.11/.20	.11/.19	.02/.18	.03/.15	.06/.11	318	318	911	500	0	
	.00/.12	.00/.12	.00/.12	.00/.11	.00/.11	.00/.10	.00/.10	.00/.08	318	318	1366	750	0	
10 KT [9-80]	300	450	550	750	850	950	1200	1700						
	.95/.97	.86/.91	.75/.81	.50/.52	.40/.42	.31/.33	.21/.23	.11/.13	544	544	182	100	0	
	.62/.85	.53/.75	.48/.67	.41/.48	.36/.41	.30/.32	.20/.22	.11/.13	544	544	455	250	0	
	.03/.51	.06/.47	.09/.43	.14/.35	.15/.32	.16/.27	.16/.21	.10/.12	544	544	911	500	0	
	.00/.30	.00/.28	.01/.27	.02/.24	.02/.22	.03/.20	.06/.17	.08/.12	544	544	1366	750	0	
100 KT [11-218]	1300	1600	1800	2100	2400	2800	3300	4100						
	.90/.92	.80/.82	.70/.72	.51/.53	.41/.43	.31/.33	.21/.23	.11/.13	1518	1518	182	100	0	
	.86/.91	.75/.80	.67/.71	.50/.52	.40/.42	.31/.33	.21/.23	.11/.13	1518	1518	455	250	0	
	.68/.83	.59/.72	.54/.65	.46/.51	.40/.42	.30/.32	.20/.22	.11/.13	1518	1518	911	500	0	
	.48/.72	.44/.63	.41/.57	.39/.47	.34/.40	.29/.32	.20/.22	.10/.13	1518	1518	1366	750	0	

MARK 50 BOMB

COVERAGE TABLE (Distances in meters)

MODERATE DAMAGE TO TOWED ARTILLERY SURFACE BURST

		EFFECTIVENESS								PROB MIN RD	EXPT RD	ACCURACY DATA			
YIELD		RADIUS OF TARGET										CD/90	CEP	HOB	PEH
3 KT [7-46]		25	100	150	250	300	350	450	600						
		.66/.90	.56/.84	.50/.76	.40/.55	.36/.44	.30/.32	.20/.22	.10/.13	201	201	182	100	0	0
		.00/.36	.00/.35	.00/.33	.03/.28	.04/.26	.05/.22	.09/.18	.10/.12	201	201	455	250	0	0
		.00/.11	.00/.11	.00/.11	.00/.11	.00/.10	.00/.10	.00/.09	.00/.08	201	201	911	500	0	0
		.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	.00/.05	201	201	1366	750	0	0
10 KT [9-80]		100	200	300	475	550	600	700	950						
		.95/.97	.86/.94	.71/.84	.47/.51	.40/.42	.30/.32	.20/.23	.11/.13	340	340	182	100	0	0
		.09/.68	.16/.63	.21/.56	.24/.41	.23/.35	.22/.30	.20/.22	.10/.12	340	340	455	250	0	0
		.00/.28	.00/.27	.00/.26	.01/.22	.02/.21	.02/.19	.04/.16	.07/.11	340	340	911	500	0	0
		.00/.14	.00/.14	.00/.13	.00/.13	.00/.12	.00/.12	.00/.11	.01/.09	340	340	1366	750	0	0
100 KT [11-218]		700	1000	1100	1400	1600	1800	2300	3200						
		.95/.97	.82/.86	.75/.77	.50/.52	.41/.43	.31/.33	.21/.23	.11/.13	1000	1000	182	100	0	0
		.86/.93	.70/.79	.65/.73	.50/.52	.40/.42	.30/.32	.21/.23	.11/.13	1000	1000	455	250	0	0
		.51/.78	.45/.66	.43/.61	.39/.47	.34/.40	.30/.32	.20/.22	.10/.13	1000	1000	911	500	0	0
		.17/.60	.22/.52	.22/.49	.23/.40	.23/.35	.22/.29	.18/.22	.10/.12	1000	1000	1366	750	0	0

SAFETY DISTANCE TABLE (Distances in meters)

TROOP SAFETY (MSD) ----- PRECLUDE (LSD) -----

YIELD	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			MOD DAM FIXED	LT DAM TO	LT ACFT OBSN UTIL	IN FLIGHT OV-10 ASLT	FOREST CARGO BLOWDOWN	WILDLAND FIRES CLASS	WILDLAND FIRES CLASS
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	BRG	BLDG	HEL	HEL	DECID CONIF	I	IV
3 KT [7-46]	4400	4100	2600	2700	2500	1900	2200	2000	1400*	700	2800	4500	4900	3400	1400	1900
	4600	4500	3000	3000	2800	2300	2600	2400	1800*	800	2900	4500	4900	3400	1500	2000
	5400	5100	3700	3700	3500	3000	3200	3000	2500*	900	3100	4700	5000	3600	1600	2200
	6100	5800	4300	4400	4200	3600	3900	3700	3100*	900	3400	4900	5200	3900	1900	2400
10 KT [9-80]	7500	7000	4600	4500	4200	3400	3300	3000	1700*	1100	4500	7300	7700	6500	2200	3600
	7900	7400	5000	4900	4600	3800	3700	3400	2100*	1200	4500	7300	7700	6500	2300	3500
	8600	8100	5700	5600	5300	4500	4500	4100	2800*	1400	4700	7300	7600	6500	2600	3800
	9400	8800	6400	6300	6000	5200	5200	4800	3500*	1600	4900	7600	7900	6800	2900	4100
100 KT [11-218]	22100	20500	12900	11400	10500	7900	6800	6100	2800	2300	9700	16900	16900	16900	5400	9000
	22600	20900	13300	11800	10900	8300	7300	6500	3200	2400	9700	16900	16900	16900	5400	9000
	23300	21600	14000	12500	11600	9000	8000	7200	3900	2600	9700	16900	16900	16900	5500	9000
	24000	22300	14700	13200	12300	9700	8700	7900	4600	2900	9900	16900	16900	16900	5800	9100

*Nuclear radiation effects are significant. If troops have history of previous exposure, consult Figure 15-8 for modification of risk radii.

A FALLOUT PREDICTION SHOULD BE MADE

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CHAPTER 12
ATOMIC DEMOLITION MUNITIONS

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CHAPTER 12

ATOMIC DEMOLITION MUNITIONS

12-1. GENERAL. This chapter contains effects data for use of atomic demolition munitions (ADM) for surface and subsurface emplacement. The major damage producing mechanisms for ADM targets are cratering and ground shock, but air blast often is the governing effect for damage to surface structures and materiel. Several tables show the radii of effects of overpressures on surface structures, while other tables present the radii of safety for personnel from the governing effect. The tables on page 12-8 consider the cratering effects for crater obstacles and, on page 12-7, the crater produced landslide obstacle. The tunnel demolition tables on page 12-6 consider the joint effects of cratering and ground shock. The special ADM target analysis techniques outlined in FM 5-26 should be consulted for additional information.

12-2. SUMMARY OF ATOMIC DEMOLITION MUNITIONS. The principal characteristics of current ADM systems are listed below in Table 12-1.

12-3. EMPLOYMENT CONSIDERATIONS. ADM are normally employed against structures, materiel and terrain features, rather than against personnel. They constitute an expansion to the current family of military explosives for the performance of demolition missions by providing significant reductions in time, manpower and logistical efforts. The fallout potential of ADM must be considered in planning the employment of ADM. Further discussion of ADM fallout considerations are contained in FM 3-12 and FM 5-26.

12-4. REACTION TIME. A reaction time of two hours can be used for initial mission planning, command post exercises, and field training exercises where the handling, preparation, movement and emplacement of an ADM system is directed or simulated. In situations where war reserve or training ADM are physically present, this value can be used for general tactical planning. Where detailed tactical planning is required, the reaction times considered should be those obtained from the ADM delivery unit concerned. The reaction time listed is for an average, reasonably well-trained unit operating under daylight conditions for a surface emplacement without tamping or for installation in a prepared emplacement chamber with favorable weather conditions. Reaction time does not include travel time but only the time required for the performance of required technical operations for the preparation for firing the ADM. Blackout operations, unfavorable weather, enemy interference, equipment breakdown, and faulty test indications will extend the time listed and must be given consideration as part of the tactical planning process when the time of execution is being established. The minimum time that can be set on the timer mechanism must be considered in the scheduling of firing. Travel time to allow emplacing personnel to travel to a safe distance from the detonation must be considered and included. The ADM emplacing unit can compute required timer settings when provided with one or more of the following items of information: desired time of detonation, earliest possible allowable time of detonation, latest allowable time of detonation, time period (span) during which detonation is allowed. The ADM has both a timer and remote firing capability. When using the time option, the time of detonation may be varied in 10 minute increments from 10 minutes to 1 hour and in 30 minute increments to 12 hours.

TABLE 12-1 CHARACTERISTICS OF ATOMIC DEMOLITION MUNITIONS

System	Yield (KT)	Cannister Length (m)	Emplacement Hole Diameter (m)	Transportation Weight (kg)
W40 Y-1	1.0	1.52	0.76	227
W40 Y-2	5.0	1.52	0.76	227

NOTES:

1. Maximum backfill limitation is 10 meters.
2. For underwater emplacement, depth limitation is 30 meters.

CRATER SKETCH AND NOMENCLATURE

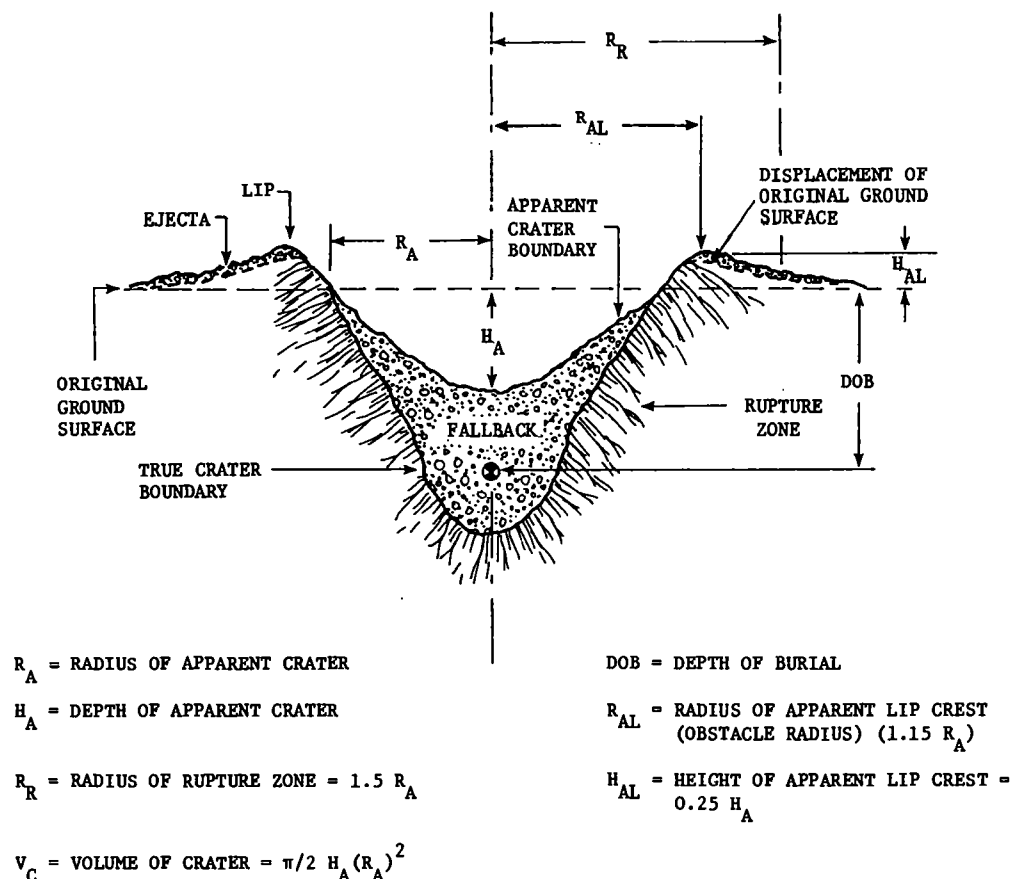


TABLE 12-2 AIRBLAST DAMAGE RADII FOR BUILDINGS
SURFACE BURST
 (Distances in meters)

Target Description	Degree of Damage	Yield (KT)	
		1.0	5.0
Multistory blast-resistant reinforced concrete building with reinforced concrete walls, no windows.	Mod	200	345
	Sev	120	215
Multistory reinforced-concrete building with concrete walls, small window ares, three to eight stories.	Mod	350	585
	Sev	185	335
Multistory wall-bearing building, brick apartment house type, up to three stories.	Mod	555	930
	Sev	345	585
Multistory wall-bearing building, monumental type, up to four stories.	Mod	385	600
	Sev	240	405
Wood frame building, house type, one or two stories.	Mod	775	1190
	Sev	420	730
Light steel frame industrial buildings, single-story up to 5-ton crane capacity.	Mod	435	620
	Sev	160	325
Heavy steel frame industrial building, single-story, with 25 to 50 ton crane capacity.	Mod	310	550
	Sev	145	295
Heavy steel frame industrial building, single-story, with 60 to 100 ton crane capacity.	Mod	255	465
	Sev	135	265
Multistory steel frame office-type building, 3 to 10 story, earthquake resistant construction.	Mod	185	315
	Sev	95	165
Multistory steel frame office-type building, 3 to 10 story, non-earthquake resistant construction.	Mod	240	415
	Sev	120	210
Multistory reinforced concrete frame office-type building, 3 to 10 stories, earthquake resistant construction.	Mod	190	335
	Sev	110	195
Multistory reinforced concrete frame office-type building, 3 to 10 stories, non-earthquake resistant construction.	Mod	230	430
	Sev	120	240

NOTE: Values presented are for surface bursts only. For subsurface bursts, reduce radii by values given in airblast damage radii reduction table, page 12-11 (Table 12-13).

TABLE 12-3 AIRBLAST DAMAGE RADII FOR BRIDGES

SURFACE BURST
(Distances in meters)

Target Description	Degree of Damage	Yield (KT)	
		1.0	5.0
Highway and railroad truss bridges, spans 60-120 meters. Two-lane hwy, dbl trk, open floor and sgl trk ballast floor, railroad; spans 60-120 meters. Sgl trk, open floor, RR; spans 120 meters.	Mod	200	380
	Sev	130	255
Highway and railroad girder bridges; spans 23 meters. Two-lane deck and through and four-lane deck, highway. Dbl trk deck, open or ballast floor, sgl or dbl trk, through, ballast floor, railroad.	Mod	135	255
	Sev	100	185
Highway and railroad girder bridges; spans 60 meters. Two-lane through and four-lane deck or through, hwy. Dbl trk deck or through, ballast floor, railroad.	Mod	175	325
	Sev	105	200
Highway and railroad girder bridges; spans 60 meters. Two-lane highway. Sgl trk deck or through. Ballast floor and dbl trk deck or through, open floor, railroad.	Mod	270	455
	Sev	165	335

NOTE: Values presented are for surface bursts only. For subsurface bursts, reduce radii by values given in airblast damage radii reduction table, page 12-11 (Table 12-13).

TABLE 12-4 AIRBLAST DAMAGE RADII FOR FIELD FORTIFICATIONS

SURFACE BURST
(Distances in meters)

Target Description	Degree of Damage	Yield (KT)	
		1.0	5.0
Command post and personnel shelter, modular sections 1.8m x 2.5m (6 ft by 8 ft) with top 1m to 1.5m (3 ft to 5 ft) below ground surface, earth covered, and covered trench entrance.	Mod	120	205
	Sev	115	195
Machinegun emplacement 2m x 2m (7 ft by 7 ft), framework extends .6m (2 ft) above original ground surface, has open firing ports and open trench entrance, 1m to 1.5m (3 ft to 5 ft) mound of earth covers framework and extends down to the ground surface except at openings.	Mod	175	300
	Sev	160	270
Firing port facing towards ground zero.	Mod	140	240
	Sev	135	225
Firing port facing away from ground zero	Mod	285	485
	Sev	220	375
Unrevetted trenches and foxholes with or without light cover.	Mod	220	420
	Sev	235	615
Wire entanglements:			
Double apron barbed wire	Sev	220	420
Concertina	Sev	235	615

NOTE: Values presented are for surface bursts only. For subsurface bursts, reduce radii by values given in airblast damage radii reduction table, page 12-11 (Table 12-13).

TABLE 12-5 AIRBLAST DAMAGE RADII FOR MILITARY FIELD EQUIPMENT

SURFACE BURST
(Distances in meters)

Target Description	Degree of Damage	Yield (KT)	
		1.0	5.0
Tracked Vehicles	Mod	155	295
	Sev	95	185
Artillery	Mod	160	300
	Sev	135	260
Wheeled Vehicles and Armored Personnel Carriers (APC)	Mod	215	405
	Sev	145	275
Supply Dumps	Sev	90	175
Radio-Fire Control Equipment	Sev	200	385
Open-grid-radar-antenna	Sev	505	965
Railroad rolling stock	Mod	225	385
End-on orientation	Sev	210	355
Railroad rolling stock	Mod	295	565
Side-on orientation	Sev	240	455
Railroad locomotives	Mod	160	275
End-on orientation	Sev	100	170
Railroad locomotives	Mod	195	370
45° orientation	Sev	100	185
Railroad locomotives	Mod	200	375
Side-on orientation	Sev	110	210
Engineer earth-moving equipment in open	Mod	285	545
	Sev	175	335
Engineer earth-moving equipment, shielded	Mod	160	310
	Sev	140	265
Jet fighter aircraft (random orientation)	Mod	175	300
	Sev	140	240
Jet bomber aircraft (random orientation)	Mod	340	585
	Sev	305	520
Propeller Transports (random orientation)	Mod	380	650
	Sev	340	585
Helicopters (random orientation)	Mod	455	780
	Sev	400	690

NOTE: Values presented are for surface bursts only. For subsurface bursts, reduce radii by values given in airblast damage radii reduction table, page 12-11 (Table 12-13).

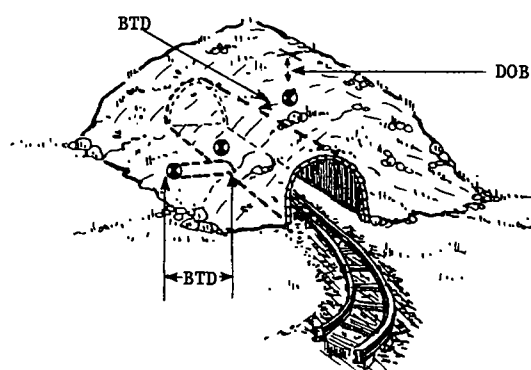


FIGURE NOTES

1. Burst to Tunnel Distance (BTD) is the distance from the ADM to the nearest point on the wall of the tunnel.
2. The Burst to Tunnel Distance (BTD) is 0 when the ADM is placed anywhere inside the main tunnel.

TABLE 12-6 TUNNEL DEMOLITION TABLES
MINIMUM YIELD (KT) ADM REQUIRED TO EXTEND DAMAGE FOR 30 METERS
WITHIN A TUNNEL THROUGH A DRY HARD ROCK MEDIUM.

SEVERE DAMAGE*

Burst to Tunnel Distance (meters)	Depths of Burst (m)										
	0	1	2	3	4	5	6	7	8	10	15
15	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
25	5.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
30	5.0	5.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
35	5.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
40	5.0	5.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
45	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1.0	1.0	1.0	1.0
50	**	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1.0	1.0
55	**	**	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
60	**	**	**	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0

*Considered destroyed. Requires standard tunneling procedures to repair. Dislodged material completely fills the tunnel opening.

**Thirty meters damage not achievable.

MODERATE DAMAGE***

Burst to Tunnel Distance (meters)	Depths of Burst (m)										
	0	1	2	3	4	5	6	7	8	10	15
15	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
25	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
30	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
35	5.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
40	5.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
45	5.0	5.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
50	5.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
55	5.0	5.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
60	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1.0	1.0	1.0	1.0

***Significant rehabilitation required to repair. Tunnel may be passable on foot without recovery work.

DEMOLITION OF BRIDGES AND PIERS

POSITIONING OF THE ADM

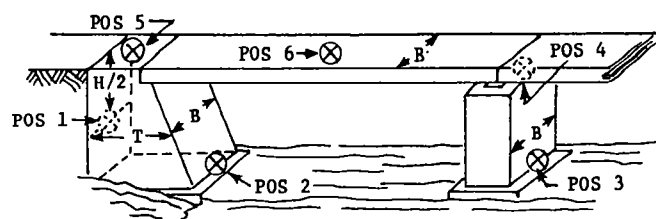
Position	Location
1	Behind Abutment (buried)
2	Face of Abutment
3	Base of Pier
4	Top of Pier, under roadway
5	Top of Abutment
6	Center of Span

POSITION 1

Abutment Thickness (meters) (T)	Maximum Abutment Width (B) That Can be Demolished (meters)	
	Yield (KT)	
	1.0	5.0
2	72	>100
5	84	>100
10	96	>100
15	>100	>100

NOTE: Maximum abutment width increases as the abutment thickness increases. This is due to enhancement of cratering effects as the depth of burial (thickness of abutment) increases.

SKETCH OF PLACEMENT POINTS



POSITION 2

	Maximum Abutment Width (B) and Thickness (T) That Can be Demolished (meters)	
	Yield (KT)	
	1.0	5.0
Thickness (T)	14.6	25.0
Width (B)	60.0	100.0

POSITIONS 3, 4, 5 or 6

Maximum Abutment, Pier or Roadway Width That can be Demolished (meters)

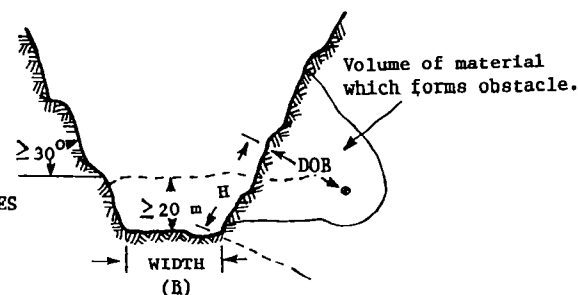
	Yield (KT)	
	1.0	5.0
Width	60.0	100.0

LANDSLIDE OBSTACLES

(Distances in meters)

CRATERING ON SIDES OF HILLS AND MOUNTAIN PASSES

DEPTH OF BURIAL INTO THE HILLSIDE
(PERPENDICULAR TO VALLEY WALL)



YIELD (KT)	DEFILE WIDTH (B)													
	20	30	40	50	60	70	80	90	100	110	120	130	140	150
5.0	1	2	3	4	4	5	6	8	11	15	20	28	38	-
1.0	7	8	10	14	17	25	35	-	-	-	-	-	-	-

MINIMUM EMPLACEMENT HEIGHT (H) ABOVE THE VALLEY FLOOR TO PRODUCE THE DESIRED LANDSLIDE
(MEASURED PARALLEL TO VALLEY WALL)

YIELD (KT)	DOB (Into the Hillside)													
	0	1	2	3	4	5	10	15	20	25	30	35	40	45
5.0	22	28	31	33	35	36	42	45	49	51	53	54	56	57
1.0	13	19	21	22	24	25	29	32	33	35	36	36	36	37

NOTES:

1. Valley walls must make an angle with the valley floor of 30° or more.
2. After determination of yield and DOB required, the minimum emplacement height above the valley floor must be determined. Enter first table with yield in KT and width of the defile in meters to obtain the burial depth measured perpendicular to the side of the defile. Use this burial depth and the yield to enter the second table and obtain the distance up the side of the defile from the bottom to the point where the burial hole is to be dug. This distance should be greater than the DOB shown on sketch.
3. Use of these tables will result in the production of an obstacle with heights of 20 or more meters with side slopes of greater than 30° across the width of the valley. See Sketch.

TABLE 12-7 APPARENT CRATER DIMENSIONS

YIELD 1.0 KT

DEPTH OF BURST	CRATER RADIUS DRY SOIL	RADIUS OF RUPTURE ZONE DRY SOIL	CRATER DEPTH DRY SOIL	CRATER RADIUS DRY ROCK	RADIUS OF RUPTURE ZONE DRY ROCK	CRATER DEPTH DRY ROCK	CRATER RADIUS WET SOIL	RADIUS OF RUPTURE ZONE WET SOIL	CRATER DEPTH WET SOIL	CRATER RADIUS WET ROCK	RADIUS OF RUPTURE ZONE WET ROCK	CRATER DEPTH WET ROCK
-5	4	6	2	0	0	0	8	11	3	2	3	1
-4	5	9	3	1	1	0	9	14	4	4	6	2
-3	7	11	4	3	5	1	11	17	5	6	9	4
-2	10	15	4	6	9	3	14	21	6	9	13	5
-1	13	20	5	9	13	4	18	27	8	12	18	6
0	19	28	9	15	22	7	25	37	9	18	27	9
1	26	39	12	22	33	9	30	46	12	26	38	11
2	31	46	14	25	37	11	33	50	14	29	44	13
3	34	50	14	27	40	12	35	53	16	31	47	14
4	35	53	15	28	42	13	37	55	17	33	49	15
5	36	54	16	29	44	14	38	57	18	34	51	16
10	40	60	20	35	52	18	45	67	22	40	60	20
15	42	64	23	39	58	21	50	76	25	44	66	24
20	44	66	26	42	63	23	55	83	29	47	70	27
25	45	68	28	44	66	25	59	89	31	49	74	30
30	46	70	30	46	68	26	62	93	33	51	76	31
35	47	71	30	46	69	27	63	95	33	52	78	32
40	48	72	29	45	68	26	64	95	33	52	78	32
45	48	72	28	43	64	23	63	94	31	52	77	31
50	48	72	26	37	56	18	62	93	29	51	76	28
55	48	72	24	23	35	8	60	90	27	48	73	25
60	48	72	21	0	0	0	59	88	24	43	64	14

YIELD 5.0 KT

DEPTH OF BURST	CRATER RADIUS DRY SOIL	RADIUS OF RUPTURE ZONE DRY SOIL	CRATER DEPTH DRY SOIL	CRATER RADIUS DRY ROCK	RADIUS OF RUPTURE ZONE DRY ROCK	CRATER DEPTH DRY ROCK	CRATER RADIUS WET SOIL	RADIUS OF RUPTURE ZONE WET SOIL	CRATER DEPTH WET SOIL	CRATER RADIUS WET ROCK	RADIUS OF RUPTURE ZONE WET ROCK	CRATER DEPTH WET ROCK
-5	13	19	6	6	9	2	10	29	4	11	16	6
-4	15	23	7	8	13	4	22	33	10	13	20	8
-3	18	28	7	11	17	5	25	37	11	16	25	9
-2	22	33	8	14	21	7	29	43	13	20	30	10
-1	26	39	11	18	27	9	35	53	14	24	35	12
0	32	48	15	26	38	11	43	64	16	30	45	15
1	38	57	18	32	48	13	46	69	18	38	57	16
2	44	66	21	37	56	16	50	75	21	43	64	18
3	49	73	22	40	59	17	53	79	23	46	69	20
4	52	78	23	41	62	18	55	82	24	49	73	21
5	54	81	23	43	65	19	57	85	26	51	76	22
10	60	91	27	50	75	24	64	96	31	57	86	27
15	64	96	31	55	82	28	70	106	35	63	94	31
20	66	99	35	59	88	32	76	114	39	67	101	35
25	68	103	38	63	94	34	82	123	42	71	107	39
30	70	106	41	66	99	37	87	130	45	74	111	42
35	72	107	43	69	103	39	91	137	48	77	115	45
40	73	109	45	71	106	40	95	142	50	79	118	47
45	74	111	47	72	109	42	98	146	52	81	121	49
50	75	112	48	73	110	42	100	150	53	82	123	51
55	76	114	48	74	111	43	101	152	53	83	124	52
60	76	114	48	73	110	42	102	153	53	83	125	52
65	77	115	47	72	108	41	102	153	52	83	125	52
70	77	116	46	70	105	39	101	152	51	83	125	51
75	77	116	44	66	99	35	100	151	49	82	124	48
80	78	116	42	60	90	30	99	149	47	81	122	45
85	78	116	40	50	75	21	98	147	44	80	119	40
90	78	116	37	26	39	6	96	144	42	77	115	34
95	77	116	34	0	0	0	95	142	39	71	106	25

NOTE: Dry soil has 10% or less moisture content and less than 50% saturation.
 Dry rock has 3% or less moisture content and less than 50% saturation.
 Linear interpolation is permitted for depths of burial not shown.
 To obtain obstacle diameter, multiply apparent crater radius by 2.3.

TABLE 12-8 RADII OF OVERPRESSURES
(Distances in meters)

YIELD 1.0 KT					YIELD 5.0 KT				
DOB (meters)	PSI				DOB (meters)	PSI			
	1	3	6	10		1	3	6	10
0	1170	600	415	300	0	3050	1160	780	540
1	1150	575	400	290	1	2975	1120	755	520
2	1130	545	385	275	2	2895	1095	735	505
3	1080	525	370	265	3	2820	1060	715	490
4	1040	505	350	255	4	2745	1025	685	470
5	990	480	335	240	5	2675	995	665	455
6	945	460	320	225	6	2610	970	645	440
7	905	440	300	215	7	2535	940	625	425
8	870	420	285	205	8	2470	910	600	410
9	830	400	275	195	9	2400	885	580	390
10	800	385	265	180	10	2335	855	560	375
12	725	350	235	165	12	2220	805	525	350
14	665	320	215	150	14	2105	755	490	320
18	560	265	175	120	16	2000	705	455	290
20	515	235	160	110	18	1895	665	425	270
25	405	190	120	85	20	1795	625	390	250
					25	1575	525	330	200
					30	1385	440	265	150
					32	1320	405	245	140
					34	1255	370	225	125
					40	1060	300	175	80

NOTE: Linear interpolation is permitted for depths of burst not shown.

TABLE 12-9 SAFE SEPARATION DISTANCES OF ADM FROM ANOTHER ADM
FOR MULTIPLE DETONATIONS
(Distances in meters)

DOB	SEPARATE DETONATION	SIMULTANEOUS DETONATION
0	1000	500
2	1000	150
5	1000	170
10	1000	195
20	1000	230
30	1000	260
40	1000	285
50	1000	300
60	1000	310
80	500	300
100	500	280

TABLE 12-10 RADII OF SAFETY TABLES
(Distances in meters)

DOB	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED		
	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER
	RISK	RISK	RISK	RISK	RISK	RISK	RISK	RISK	RISK
0	1800T	1670T	1110R	1190R	1170R	1110R	980R	890R	740R
1	1680T	1650T	940R	1130T	1000R	940R	1050M	870M	700M
3	1700M	1400M	980T	1700M	1400M	970M	1700M	1400M	970M
5	1610M	1320M	930T	1610M	1320M	830M	1610M	1320M	830M
7	1600M	1240M	1000S	1600M	1240M	1000S	1600M	1240M	1000S
10	1660S	1660S	1660S	1660S	1660S	1660S	1660S	1660S	1660S
15	1930S	1930S	1930S	1930S	1930S	1930S	1930S	1930S	1930S
20	2090S	2090S	2090S	2090S	2090S	2090S	2090S	2090S	2090S
25	2330S	2330S	2330S	2330S	2330S	2330S	2330S	2330S	2330S
30	2320S	2320S	2320S	2320S	2320S	2320S	2320S	2320S	2320S
50	1400S	1400S	1400S	1400S	1400S	1400S	1400S	1400S	1400S
65	900S*	900S*	900S*	900S*	900S*	900S*	900S*	900S*	900S*

Governing Effects: B - BLAST; M - EJECTA MISSILES; R - NUCLEAR RADIATION; S - BASE SURGE; T - THERMAL RADIATION

*Missile effects data not available.

TABLE 12-10 RADII OF SAFETY TABLES (Cont)

(Distances in meters)

5.0 KT

DOB	UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED		
	NEG RISK	MOD RISK	EMER RISK	NEG RISK	MOD RISK	EMER RISK	NEG RISK	MOD RISK	EMER RISK
0	5410T	5010T	3130T	3085T	2840T	2210T	2195B	1930B	1425B
1	5200T	4805T	2995T	2950T	2725T	2105T	2155B	1885B	1380B
3	4760T	4400T	2740T	2895T	2490T	1935T	2425M	1905M	1550M
5	4320T	3990T	2480T	2890M	2390T	1985M	2890M	1970M	1985M
7	4120T	3587T	2430M	3180M	2605M	2430M	3180M	2605M	2430M
10	4100M	3425M	2375M	4100M	3425M	2375M	4100M	3425M	2375M
15	3660M	3135M	2790S	3660M	3135M	2790S	3660M	3135M	2790S
20	4380S	4380S	4380S	4380S	4380S	4380S	4380S	4380S	4380S
30	5430S	5430S	5430S	5430S	5430S	5430S	5430S	5430S	5430S
65	4585S	4585S	4585S	4585S	4585S	4585S	4585S	4585S	4585S
100	2305S	2305S	2305S	2305S	2305S	2305S	2305S	2305S	2305S

Governing Effects: B - BLAST; M - EJECTA MISSILES; R - NUCLEAR RADIATION; S - BASE SURGE; T - THERMAL RADIATION

If nuclear radiation effects govern and troops have a history of previous exposure, consult Figure 15-8 for modification of risk radii.

TABLE 12-11 RADII OF FIRE AREAS
SURFACE AND SUBSURFACE BURSTS
(Radii in meters: Relative humidity - 50%)

YIELD (KT)	DEPTH OF BURST	DRY FOREST FLOOR	GREEN FOREST FLOOR	WHOLESALE BUSINESS BUILDING	RETAIL BUSINESS BUILDING	POOR HOMES	MEDIUM HOMES
1.0	0	1065	630	315	280	350	300
	5	720	425	215	190	240	205
	10	375	220	110	100	125	105
	15	30	115	10	10	10	10
	20	0	0	0	0	0	0
	25	0	0	0	0	0	0
5.0	0	2330	1490	770	675	860	735
	5	1860	1190	615	540	685	585
	10	1390	890	460	400	510	435
	15	920	590	305	265	340	290
	20	450	285	150	130	165	140
	25	0	0	0	0	0	0

NOTE: Linear interpolation is permitted for depths of burst not shown.
Data source is study, Evaluation of Nuclear Weapons Thermal Threat, prepared by Stanford Research Institute, Menlo Park, CA, August 1966.
Poor homes are considered to have wood siding, tarred roofs, windows with flammable curtains, flammable rubbish in yards, close proximity to neighboring houses and high population density.
Medium homes are assumed to have brick siding, roofs of asbestos and tar shingles with surface of crushed stones, heavy drapes and/or venetian blinds on windows, trees shading houses and windows, 10 meters or more between houses and lower population density.

TABLE 12-12 DOSE-DI STANCE TABLES

(Distances in meters)

E X P O S E D P E R S O N N E L			P E R S O N N E L I N F O X H O L E S		
YIELD (KT)	1.0	5.0	YIELD (KT)	1.0	5.0
DOSE (RAD)	DISTANCE		DOSE (RAD)	DISTANCE	
5	1620	2680	5	1350	2290
10	1550	2520	10	1220	2110
15	1410	2400	15	1150	2010
20	1360	2320	20	1100	1920
25	1310	2260	25	1060	1860
30	1280	2210	30	1030	1820
35	1250	2170	35	1010	1780
40	1220	2130	40	990	1750
45	1200	2100	45	960	1710
50	1180	2070	50	940	1680
60	1150	2020	60	910	1640
70	1120	1980	70	890	1600
80	1100	1940	80	860	1570
90	1080	1910	90	850	1540
100	1060	1890	100	830	1510

NOTES:

1. Data apply only to surface bursts.
2. Calculations were made with troop safety yield.
3. Recommend that closest table dose and/or distance be used; DO NOT INTERPOLATE.

TABLE 12-13 MISCELLANEOUS ADM TABLES

(Distances in meters)

AIR BLAST DAMAGE-RADII REDUCTION FOR SURFACE STRUCTURES

DOB (meters)	YIELD (KT)	
	1.0	5.0
1	10	10
2	20	15
3	30	25
4	45	40
5	60	50
6	90	65
7	105	80
8	120	100
9	*	120
10	*	145
12	*	180
14	*	*

NOTE: To determine the damage radius to target elements damaged from the airblast effects as a result of subsurface detonations, the distances given in this table must be subtracted from the blast damage radius for surface bursts. Should the results be a negative number, or should the reduction distance be shown as an asterisk, consider the damage radius to be zero.

RADII OF LAND MINE DETONATION VULNERABILITY (10% INCIDENCE)
SURFACE BURSTS

MINE TYPE	YIELD (KT)	
	1.0	5.0
Anti-Tank	245	495
Anti-Pers	680	1530

NOTE: For subsurface bursts, reduce radii by values given in airblast damage radii reduction table above.

SAFETY DISTANCES FOR LIGHT AIRCRAFT IN FLIGHT
SURFACE BURSTS

YIELD (KT)	OBS & UTIL HEL	ATTACK HEL	CARGO HEL & OV-1B
1.0	1755	1910	1350
5.0	4420	4710	3665

PRECLUDE TREE BLOWDOWN
SURFACE BURSTS

Yield (KT)	DECIDUOUS	CONIFEROUS
1.0	500	360
5.0	1300	910

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CHAPTER 13
WEAPON EFFECTS TABLES

		Page
Short Range Cannon	0.2 KT	13-2
Short Range Cannon	1.0 KT	13-4
Medium Range Cannon	2.0 KT	13-6
Medium Range Cannon	8.0 KT	13-8
Free Flight Rocket	5.0 KT	13-10
Free Flight Rocket	20.0 KT	13-12
Guided Missile	10.0 KT	13-14
Guided Missile	50.0 KT	13-16
Guided Missile	100.0 KT	13-18
MARK 50 Bomb	3.0 KT	13-20
MARK 50 Bomb	10.0 KT	13-22
MARK 50 Bomb	100.0 KT	13-24

SHORT RANGE CANNON

.2 KT
(3-10)

EFFECTS TABLES

(Distances in meters)

PERSONNEL CASUALTIES

HOB	EXPOSED			IN OPEN FOXHOLES			IN APC'S			IN TANKS			IN EARTH SHELTERS		
	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT
	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH
600	0	0	170	0	0	0	0	0	50	0	0	0	0	0	0
570	0	0	230	0	0	0	0	0	160	0	0	0	0	0	0
540	0	0	280	0	0	0	0	0	220	0	0	0	0	0	0
510	0	0	320	0	0	0	0	0	260	0	0	90	0	0	0
480	0	0	350	0	0	40	0	0	300	0	0	170	0	0	0
450	0	50	380	0	0	140	0	0	340	0	0	220	0	0	0
420	0	140	400	0	0	190	0	70	360	0	0	260	0	0	0
390	0	190	430	0	0	230	0	140	390	0	0	290	0	0	0
360	0	230	440	0	0	260	0	190	410	0	40	320	0	0	0
330	100*	260	460	0	0	290	40*	220	430	0	120	340	0	0	0
300	150*	280	480	0	100	310	110*	250	440	0	160	360	0	0	10
270	180*	300	490	0	140	330	150*	270	460	40*	200	380	0	0	90
240	210*	320	500	30*	170	350	180*	290	470	100*	220	390	0	0	140
210	230*	330	510	90*	200	360	210*	310	480	140*	240	400	0	0	160
180	240*	340	520	120*	220	370	220*	320	490	160*	260	410	0	0	190
150	260*	350	520	140*	230	380	240*	330	490	180*	270	420	0	30	200
120	260*	360	520	160*	240	380	240*	330	490	190*	270	420	0	70	210
90	270*	360	520	170*	240	380	250*	330	490	200*	280	420	0	80	220
60	260*	350	510	170*	240	380	250*	330	480	200*	270	410	40	90	220
30	250*	340	490	160*	230	360	240*	320	470	190*	260	400	40*	90	210
1	230*	310	460	130*	210	330	210*	290	430	160*	240	370	30*	70	190

PERSONNEL CASUALTIES

MODERATE DAMAGE

SEVERE DAMAGE

HOB	IN MULTI-STORY BRICK APTS			IN WOOD FRAME BUILDINGS			2nd DEGREE BURNS		WHEELED VEHICLES		TOWED ARTY		MULTI STORY FACTORIES		
	IMMED	IMMED	LAT	IMMED	IMMED	LAT	SUMMER	WINTER	EXPO	SHLD	TANKS	TOWED	WOOD	BRICK	FACT-
	PERM	TRAN	LETH	PERM	TRAN	LETH	UNIFORM	UNIFORM					FRAME	APT	ORIES
600	0	0	90	0	0	90	0	0	0	0	0	0	0	0	0
570	0	0	180	0	0	180	0	0	0	0	0	0	0	0	0
540	0	0	230	0	0	230	0	0	0	0	0	0	0	0	0
510	0	0	280	0	0	280	0	0	0	0	0	0	0	0	0
480	0	0	310	0	0	320	0	0	0	0	0	0	0	0	0
450	0	0	350	0	0	350	0	0	0	0	0	0	0	0	0
420	0	90	370	0	80	370	0	0	0	0	0	0	0	0	0
390	0	150	400	0	150	400	0	0	0	0	0	0	0	0	0
360	0	200	420	0	190	420	0	0	0	0	0	0	0	0	0
330	50*	230	440	80	230	440	0	0	0	0	0	0	80	0	0
300	120*	260	450	130	260	450	0	0	0	0	0	0	130	0	0
270	160*	280	470	180	280	470	0	0	0	0	0	0	180	0	0
240	190*	300	480	260	300	480	0	0	0	0	0	0	260	120	0
210	210*	310	490	330	330	490	60	0	0	0	0	0	330	150	0
180	280	330	490	350	350	490	100	60	0	0	0	0	350	280	0
150	280	330	500	340	340	500	130	90	0	0	0	0	340	280	0
120	260	340	500	320	340	500	150	120	40	40	0	0	320	260	0
90	250*	340	500	290	340	500	160	130	70	70	30	0	290	230	0
60	250*	330	490	270	330	490	170	150	90	70	60	50	270	210	60
30	240*	320	470	240	320	470	180	150	90	70	70	60	240	190	70
1	220*	290	440	220	290	440	140	110	70	70	50	40	220	180	50

* Subtract 100 meters from the 8,000 rad RD to obtain the approximate 18,000 rad RD.

SHORT RANGE CANNON

.2 KT

(3-10)

EFFECTS TABLES

(Distances in meters)

PRECLUDE						SAFETY RADII									
1-PSI OVER- PRES- SURE	MOD DAM FIXED BRG	FOREST BLOWDOWN		WILDLAND FIRES		UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			HOB
		DECID	CONIF	CLASS I	CLASS IV	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	
640	0	0	0	190	0	900	790	510	700	650	510	470	410	240	600
660	0	0	0	250	0	920	810	540	720	670	540	500	440	290	570
690	0	0	0	290	0	930	820	560	740	690	560	520	470	330	540
710	0	0	0	330	0	940	840	580	760	700	580	550	490	360	510
730	0	0	0	360	0	960	850	600	770	720	600	570	510	390	480
760	0	0	0	390	0	970	870	620	790	730	620	590	530	420	450
790	0	0	0	410	0	980	880	630	800	750	630	620	550	440	420
810	0	0	0	430	0	990	890	650	810	760	650	650	570	460	390
860	0	0	0	450	70	1000	900	660	820	770	660	680	580	480	360
1110	0	0	0	470	130	1000	910	670	830	780	670	750	600	500	330
1130	0	0	0	490	180	1010	920	680	840	790	680	890	690	510	300
1130	0	0	0	500	210	1020	920	690	850	800	690	950	720	520	270
1110	0	0	0	510	230	1020	930	700	850	810	700	950	810	530	240
1080	0	330	0	520	250	1030	930	710	860	810	710	930	810	540	210
1030	0	370	0	530	270	1030	940	710	860	810	710	900	780	550	180
970	0	360	230	540	280	1040	940	710	860	810	710	850	750	550	150
910	0	330	210	540	290	1040	950	710	860	810	710	800	700	550	120
830	100	300	190	550	300	1040	950	710	850	810	710	730	650	550	90
760	120	270	170	550	310	1050	950	700	840	790	700	670	630	540	60
680	110	250	160	550	310	1050	950	680	820	770	680	650	610	520	30
600	90	180	150	410	230	790	730	630	770	730	630	610	570	480	1

SEVERE DAMAGE															
BRIDGES		SUPPLY DEPOTS	SURFACE TO AIR MISSILES		MISSILES & ROCKETS		HELICOPTERS RANDOMLY PARKED		RADIOS & FIRE CON EQUIP	OPEN GRID RADAR ANT	TRACKED VEHICLES (no tanks)		RAILROAD BOX & FLAT CARS		HOB
FIXED	FLTG		EXPO	RVTTD	TVLG	ERECT	CGO TRANS	LT OBSN			EXPO	SHLD	LOCO		
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	600
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	570
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	540
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	510
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	480
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	450
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	420
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	390
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	360
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	330
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	300
0	0	0	0	0	0	70	60	0	0	0	0	0	0	0	270
0	0	0	0	0	0	110	110	450	0	0	0	0	0	0	240
0	0	0	20	0	0	140	150	450	0	320	0	0	0	0	210
0	0	0	60	0	0	260	250	420	0	340	0	0	0	0	180
0	0	0	80	20	0	260	240	390	20	330	0	0	0	0	150
0	0	0	100	40	30	230	220	360	60	310	0	0	0	30	120
0	0	0	100	70	60	220	200	330	90	290	10	10	0	50	90
50	60	20	100	80	80	200	180	300	100	260	50	50	0	80	60
50	60	40	100	80	80	180	160	270	100	240	60	40	0	80	30
40	40	10	90	70	60	160	150	240	90	210	40	40	0	50	1

** Nuclear radiation effects are significant. If troops have history of previous exposure, consult figure 15-8 for modification of risk radii.

SHORT RANGE CANNON 1 KT (5-24)

EFFECTS TABLES (Distances in meters)

PERSONNEL CASUALTIES															
HOB	EXPOSED			IN OPEN FOXHOLES			IN APC'S			IN TANKS			IN EARTH SHELTERS		
	IMMED PERM	IMMED TRAN	LAT LETH	IMMED PERM	IMMED TRAN	LAT LETH	IMMED PERM	IMMED TRAN	LAT LETH	IMMED PERM	IMMED TRAN	LAT LETH	IMMED PERM	IMMED TRAN	LAT LETH
600	0	220	580	0	0	290	0	110	520	0	0	370	0	0	0
670	0	280	610	0	0	340	0	200	550	0	0	410	0	0	0
640	0	330	630	0	0	380	0	270	580	0	0	450	0	0	0
610	110*	370	660	0	0	420	0	320	600	0	140	480	0	0	0
480	190*	410	680	0	90	450	120*	360	630	0	210	510	0	0	0
450	250*	440	700	0	180	480	190*	390	650	0	260	530	0	0	60
420	290*	460	720	0	230	500	240*	420	670	70*	300	550	0	0	160
390	330*	490	730	0	270	520	290*	450	680	150*	340	570	0	0	210
360	360*	510	750	120*	310	540	320*	470	700	210*	370	590	0	0	250
330	380*	530	760	180*	340	560	350*	490	710	250*	390	610	0	0	290
300	410*	540	770	220*	360	580	370*	510	720	280*	410	620	0	50	320
270	420*	560	780	250*	380	590	390*	520	740	300*	430	640	0	120	340
240	440*	570	790	280*	400	600	410*	530	740	330*	450	650	0	170	360
210	450*	580	800	300*	410	610	420*	550	750	340*	460	650	70*	200	370
180	460*	590	800	310*	420	620	430*	550	760	360*	470	660	110*	220	390
150	470*	590	800	320*	430	620	440*	560	760	370*	480	660	140*	230	390
120	470*	590	800	330*	440	620	440*	560	760	370*	480	660	150*	250	400
90	470*	590	790	330*	430	620	440*	560	750	370*	480	660	160*	250	400
60	460*	580	780	330*	430	610	440*	550	740	370*	470	650	160*	250	390
30	450*	560	760	320*	410	590	420*	530	720	350*	460	630	150*	240	380
1	410*	520	710	290*	380	550	390*	490	680	320*	420	590	130*	220	350

PERSONNEL CASUALTIES															
HOB	IN MULTI-STORY BRICK APTS			IN WOOD FRAME BUILDINGS			2nd DEGREE BURNS		WHEELED VEHICLES		MODERATE DAMAGE		SEVERE DAMAGE		
	IMMED PERM	IMMED TRAN	LAT LETH	IMMED PERM	IMMED TRAN	LAT LETH	SUMMER UNIFORM	WINTER UNIFORM	EXPO	SHLD	TANKS	TOWED ARTY	WOOD FRAME BLDG	MULTI STORY BRICK APT	FACTORIES
600	0	140	540	210	210	540	0	0	0	0	0	0	210	0	0
570	0	220	570	280	280	570	0	0	0	0	0	0	280	0	0
540	0	280	590	360	360	600	0	0	0	0	0	0	360	0	0
510	0	330	620	440	440	630	0	0	0	0	0	0	440	0	0
480	140*	370	640	520	520	650	0	0	0	0	0	0	520	0	0
450	240*	400	660	590	590	670	60	0	0	0	0	0	590	240	0
420	280	430	680	660	660	690	150	0	0	0	0	0	660	280	0
390	320	460	700	720	720	720	210	70	0	0	0	0	720	320	0
360	410	480	710	760	760	760	250	150	0	0	0	0	760	410	0
330	580	580	730	740	760	760	290	200	0	0	0	0	760	580	0
300	600	600	740	750	750	750	320	240	0	0	0	0	750	600	0
270	590	590	750	740	740	750	340	270	0	0	0	0	740	590	0
240	580	580	760	720	720	760	360	290	0	0	0	0	720	580	0
210	550	550	760	700	700	770	380	310	100	100	0	0	700	550	0
180	520	560	770	670	670	770	390	330	160	160	20	0	670	520	190
150	500	570	770	640	640	780	400	340	190	180	110	50	640	500	170
120	470	570	770	620	620	770	410	350	210	170	150	110	620	470	170
90	450*	560	760	590	590	770	420	360	220	160	180	140	590	450	190
60	440*	560	750	560	560	760	420	370	230	160	180	160	560	430	190
30	430*	540	730	520	540	740	380	330	210	160	170	160	520	410	170
1	390	500	690	480	500	690	330	280	180	160	130	120	480	390	150

* Subtract 100 meters from the 8,000 rad RD to obtain the approximate 18,000 rad RD.

SHORT RANGE CANNON

1 KT

(5-24)

EFFECTS TABLES

(Distances in meters)

PRECLUDE SAFETY RADII															
1-PSI OVER- PRES- SURE	MOD DAM FIXED BRG	FOREST BLOWDOWN		WILDLAND FIRES		UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			HOB
		DECID	CONIF	CLASS I	CLASS IV	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	
1700	0	0	0	1210	540	2320	2140	1150	1230	1090	880	1360	1070	630	600
2130	0	0	0	1230	570	2330	2150	1170	1250	1100	900	1450	1110	650	570
2170	0	0	0	1240	600	2340	2150	1180	1260	1120	920	1490	1150	680	540
2180	0	0	0	1250	620	2340	2160	1200	1270	1130	940	1740	1340	700	510
2180	0	0	0	1260	640	2350	2170	1210	1280	1150	950	1420	1370	720	480
2170	0	0	0	1270	660	2360	2170	1220	1290	1160	970	1440	1490	740	450
2150	0	0	0	1280	680	2360	2180	1230	1300	1170	980	1440	1560	750	420
2120	0	0	0	1290	700	2370	2180	1240	1310	1180	990	1420	1570	770	390
2080	0	780	0	1300	710	2370	2190	1250	1320	1190	1000	1400	1560	780	360
2030	0	830	0	1310	730	2380	2190	1260	1330	1200	1010	1760	1540	800	330
1970	0	830	510	1320	740	2380	2200	1260	1330	1200	1020	1720	1500	810	300
1910	0	820	550	1320	750	2380	2200	1270	1340	1210	1030	1670	1470	820	270
1840	150	790	540	1330	760	2390	2210	1280	1350	1220	1030	1610	1420	820	240
1760	300	760	510	1330	770	2390	2210	1280	1350	1220	1040	1550	1370	830	210
1680	280	720	470	1340	780	2390	2210	1280	1360	1230	1040	1480	1310	830	180
1600	260	680	460	1340	780	2390	2210	1290	1360	1230	1040	1410	1250	840	150
1510	260	640	440	1340	790	2400	2220	1290	1360	1230	1040	1330	1180	830	120
1430	280	600	410	1350	790	2400	2220	1290	1360	1240	1030	1260	1110	830	90
1340	270	570	390	1350	790	2400	2220	1300	1370	1240	1010	1180	1040	820	60
1250	250	540	380	1200	700	2170	2000	1150	1220	1110	990	1100	970	800	30
1170	230	510	370	1040	600	1920	1770	1000	1110	1050	940	1020	900	750	1

SEVERE DAMAGE															
BRIDGES		SUPPLY DEPOTS	SURFACE TO AIR MISSILES		MISSILES & ROCKETS		HELICOPTERS RANDOMLY PARKED		RADIOS & FIRE CON EQUIP	OPEN GRID RADAR ANT	TRACKED VEHICLES (no tanks)		RAILROAD BOX & FLAT CARS		HOB
FIXED	FLTG		EXPO	RVTDD	TVLG	ERECT	CGO TRANS	LT OBSN			EXPO	SHLD	LOCO	CARS	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	600
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	570
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	540
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	510
0	0	0	0	0	0	130	140	0	0	0	0	0	0	0	480
0	0	0	0	0	0	200	210	0	0	0	0	0	0	0	450
0	0	0	0	0	0	250	260	030	0	0	0	0	0	0	420
0	0	0	10	0	0	290	300	940	0	0	0	0	0	0	390
0	0	0	40	0	0	330	350	920	0	710	0	0	0	0	360
0	0	0	130	0	0	560	540	900	0	750	0	0	0	0	330
0	0	0	160	0	0	580	530	870	0	750	0	0	0	0	300
0	0	0	130	40	0	580	520	830	10	740	0	0	0	0	270
0	0	0	210	80	0	560	500	800	120	720	0	0	0	40	240
0	0	0	230	110	100	530	480	760	160	690	0	0	0	90	210
0	0	0	250	130	160	510	450	720	190	660	0	0	0	120	180
0	0	40	250	160	190	490	430	680	220	640	60	60	0	150	150
130	150	70	260	170	210	470	400	650	240	610	110	110	30	190	120
140	160	90	250	190	220	450	380	610	250	580	140	120	60	210	90
140	160	110	240	190	230	420	360	570	250	540	150	110	90	220	60
120	140	110	230	160	210	400	350	540	240	510	140	110	100	170	30
100	120	60	210	150	180	370	330	510	210	480	110	110	70	140	1

** Nuclear radiation effects are significant. If troops have history of previous exposure, consult figure 15-8 for modification of risk radii.

MEDIUM RANGE CANNON

2 KT

(6-38)

EFFECTS TABLES

(Distances in meters)

PERSONNEL CASUALTIES

HOB	EXPOSED			IN OPEN FOXHOLES			IN APC'S			IN TANKS			IN EARTH SHELTERS		
	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT
	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH
600	70*	450	240	0	0	510	0	370	760	0	100	590	0	0	0
570	200*	500	270	0	10	560	60*	430	790	0	210	630	0	0	0
540	240*	540	290	0	160	590	190*	470	820	0	290	660	0	0	0
510	340*	580	320	0	250	630	260*	510	850	0	350	690	0	0	120
480	390*	610	340	0	310	660	320*	550	870	110*	400	720	0	0	210
450	430*	640	360	60*	360	690	370*	580	890	200*	440	750	0	0	280
420	470*	670	380	160*	400	710	410*	610	910	260*	480	770	0	0	330
390	500*	690	1000	230*	440	740	450*	640	930	310*	510	790	0	0	370
360	530*	720	1010	280*	470	760	480*	660	950	350*	540	810	0	50	410
330	560*	730	1030	320*	500	770	510*	680	960	390*	560	830	0	140	440
300	580*	750	1040	350*	520	790	530*	700	970	420*	580	840	0	190	470
270	600*	770	1050	380*	540	800	550*	720	990	440*	600	860	40*	240	490
240	610*	780	1060	410*	560	820	570*	730	1000	460*	620	870	110*	270	510
210	620*	790	1070	420*	570	830	580*	740	1000	480*	630	880	160*	300	520
180	630*	790	1070	440*	580	830	590*	750	1010	490*	640	880	190*	320	530
150	640*	800	1070	450*	590	840	600*	750	1010	500*	640	890	210*	330	540
120	640*	800	1070	450*	590	830	600*	750	1010	510*	650	880	230*	340	540
90	640*	790	1060	450*	590	830	600*	750	1000	500*	640	880	230*	340	540
60	630*	780	1040	450*	580	920	590*	740	990	500*	630	870	240*	340	530
30	610*	760	1020	430*	560	790	570*	710	960	480*	610	840	230*	330	520
1	560*	700	950	390*	510	740	520*	660	900	440*	560	790	190*	290	470

PERSONNEL CASUALTIES

MODERATE DAMAGE

SEVERE DAMAGE

HOB	IN MULTI-STORY BRICK APTS			IN WOOD FRAME BUILDINGS			2nd DEGREE BURNS		WHEELED VEHICLES		TOWED ARTY		MULTI STORY FACTORIES		
	IMMED	IMMED	LAT	IMMED	IMMED	LAT	SUMMER	WINTER	EXPO	SHLD	TANKS	TOWED	WOOD	STORY	FACT-
	PERM	TRAN	LETH	PERM	TRAN	LETH	UNIFORM	UNIFORM				ARTY	FRAME	BRICK	ORIES
600	0	390	780	970	870	870	30	0	0	0	0	0	870	0	0
570	350	450	210	940	840	940	180	0	0	0	0	0	840	350	0
540	410	490	240	1020	1020	1020	260	0	0	0	0	0	1020	410	0
510	460	530	270	1040	1090	1090	330	120	0	0	0	0	1090	460	0
480	550	570	290	1170	1170	1170	380	210	0	0	0	0	1170	550	0
450	720	720	310	1190	1190	1190	420	280	0	0	0	0	1190	720	0
420	880	880	330	1180	1180	1180	460	330	0	0	0	0	1180	880	0
390	910	910	350	1170	1170	1170	490	370	0	0	0	0	1170	910	0
360	910	910	370	1150	1150	1150	520	410	0	0	0	0	1150	910	0
330	900	900	390	1130	1130	1130	550	440	0	0	0	0	1130	900	0
300	870	870	390	1100	1100	1100	570	470	0	0	0	0	1100	870	0
270	840	840	1000	1070	1070	1070	590	490	90	90	0	0	1070	840	0
240	800	800	1010	1030	1030	1030	610	510	200	200	0	0	1030	800	300
210	770	770	1020	1010	1010	1030	620	530	250	240	100	0	1010	770	280
180	740	760	1020	980	980	1040	630	540	280	240	170	90	980	740	260
150	710	760	1030	950	950	1040	640	550	300	230	210	150	950	710	260
120	680	760	1020	910	910	1030	650	560	330	220	250	200	910	680	280
90	650	760	1020	870	870	1030	660	570	340	220	270	220	870	650	290
60	630	750	1000	840	830	1010	640	560	330	220	260	230	830	630	270
30	600	720	980	790	790	980	590	510	300	210	240	220	790	600	250
1	580	670	920	720	720	920	530	460	260	210	180	170	720	580	220

* Subtract 100 meters from the 8,000 rad RD to obtain the approximate 18,000 rad RD.

MEDIUM RANGE CANNON

2 KT

(6-38)

EFFECTS TABLES

(Distances in meters)

PRELUDE				SAFETY RADII											
1-PSI OVER- PRES- SURE	MOD DAM FIXED BRG	FOREST BLOWDOWN		WILDLAND FIRES		UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			HOB
		DECID	CONIF	CLASS I	CLASS IV	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	
3340	0	0	0	2070	1130	3700	3440	2040	2090	1890	1360	2800	2100	890	600
3330	0	0	0	2090	1150	3710	3450	2050	2110	1910	1370	2820	2220	920	570
3310	0	0	0	2100	1170	3720	3460	2070	2120	1920	1390	2820	2380	940	540
3290	0	0	0	2110	1190	3720	3470	2080	2130	1930	1410	2810	2400	970	510
3230	0	1280	0	2120	1210	3730	3470	2090	2140	1940	1420	2780	2410	990	480
3190	0	1320	0	2130	1220	3730	3480	2100	2150	1950	1440	2750	2390	1010	450
3120	0	1310	0	2140	1240	3740	3480	2110	2160	1960	1450	2710	2360	1020	420
3050	0	1300	890	2150	1250	3740	3490	2110	2170	1970	1460	2660	2320	1040	390
2970	0	1290	920	2150	1260	3750	3490	2120	2170	1980	1470	2600	2270	1060	360
2890	210	1270	920	2160	1280	3750	3500	2130	2180	1990	1480	2530	2220	1070	330
2810	420	1240	900	2170	1290	3760	3500	2140	2190	1990	1490	2460	2160	1080	300
2720	420	1200	860	2170	1300	3760	3500	2140	2190	2000	1500	2390	2100	1090	270
2620	410	1160	800	2180	1300	3760	3510	2150	2200	2010	1510	2300	2030	1100	240
2520	410	1130	750	2180	1310	3770	3510	2150	2200	2010	1510	2220	1960	1110	210
2410	410	1090	710	2190	1320	3770	3510	2160	2210	2020	1520	2120	1880	1110	180
2310	410	1040	640	2190	1320	3770	3520	2160	2210	2020	1520	2030	1800	1110	150
2200	400	980	660	2190	1330	3770	3520	2160	2210	2020	1530	1930	1710	1110	120
2100	390	930	640	2190	1330	3770	3520	2160	2210	2020	1530	1840	1630	1100	90
1990	380	880	620	2120	1280	3660	3410	2090	2130	1950	1470	1740	1540	1080	60
1880	360	840	610	1960	1170	3440	3200	1930	1980	1800	1350	1640	1450	1060	30
1780	340	820	580	1800	1060	3220	3000	1780	1820	1650	1240	1550	1360	990	1

SEVERE DAMAGE															
BRIDGES		SUPPLY DEPOTS	SURFACE TO AIR MISSILES		MISSILES & ROCKETS		HELICOPTERS RANDOMLY PARKED		RADIOS & FIRE CON EQUIP	OPEN GRID RADAR ANT	TRACKED VEHICLES (no tanks)		RAILROAD BOX & FLAT CARS		HOB
FIXED	FLTG		EXPO	RVTTD	TVLG	ERECT	CGO TRANS	LT OBSN			EXPO	SHLD	LOCO	CARS	
0	0	0	0	0	0	190	210	0	0	0	0	0	0	0	600
0	0	0	0	0	0	290	280	0	0	0	0	0	0	0	570
0	0	0	0	0	0	350	340	130	0	0	0	0	0	0	540
0	0	0	0	0	0	410	400	1430	0	0	0	0	0	0	510
0	0	0	30	0	0	460	460	1420	0	0	0	0	0	0	480
0	0	0	110	0	0	510	520	1400	0	1140	0	0	0	0	450
0	0	0	170	0	0	570	810	1380	0	1190	0	0	0	0	420
0	0	0	210	0	0	610	810	1340	0	1190	0	0	0	0	390
0	0	0	250	10	0	620	790	1300	0	1180	0	0	0	0	360
0	0	0	290	50	0	610	770	1250	50	1170	0	0	0	0	330
0	0	0	320	90	0	680	740	1210	160	1130	0	0	0	50	300
0	0	0	340	130	90	640	720	1160	220	1100	0	0	0	100	270
0	0	0	360	160	210	610	690	1110	260	1060	0	0	0	140	240
0	0	0	370	190	260	780	650	1070	300	1030	0	0	0	180	210
200	210	50	380	210	290	750	620	1020	330	990	90	90	0	230	180
200	230	80	390	240	320	730	590	970	360	950	150	150	20	280	150
190	230	110	380	260	340	700	560	930	370	910	190	150	60	310	120
180	220	140	370	260	350	670	540	880	380	870	210	140	100	320	90
170	210	150	350	240	340	640	520	840	370	830	210	140	120	310	60
150	190	140	330	210	310	610	500	800	350	790	200	140	120	230	30
140	170	70	320	200	270	570	490	760	320	740	150	140	80	190	1

** Nuclear radiation effects are significant. If troops have history of previous exposure, consult figure 15-8 for modification of risk radii.

MEDIUM RANGE CANNON

8 KT

(9-74)

EFFECTS TABLES

(Distances in meters)

PERSONNEL CASUALTIES

HOB	EXPOSED			IN OPEN FOXHOLES			IN APC'S			IN TANKS			IN EARTH SHELTERS		
	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT
	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH
600	580*	860	1280	70*	470	910	480*	770	1170	240*	570	970	0	0	350
570	620*	890	1300	190*	530	950	540*	810	1200	320*	610	1010	0	0	420
540	670*	930	1330	280*	570	980	580*	840	1220	390*	660	1030	0	0	470
510	700*	960	1350	340*	620	1000	630*	870	1250	440*	690	1060	0	0	520
480	740*	980	1370	400*	650	1030	660*	900	1270	490*	730	1090	0	110	570
450	770*	1010	1390	450*	690	1050	700*	930	1290	530*	760	1110	0	200	600
420	800*	1030	1400	490*	720	1070	730*	950	1310	570*	790	1130	0	260	640
390	820*	1050	1420	530*	750	1090	760*	970	1320	600*	810	1150	30*	320	670
360	850*	1070	1430	560*	770	1110	780*	990	1340	630*	840	1170	120*	360	690
330	870*	1090	1450	590*	790	1130	800*	1010	1350	660*	860	1180	190*	400	720
300	880*	1100	1460	610*	810	1140	820*	1030	1360	680*	880	1190	240*	430	740
270	900*	1110	1470	630*	830	1160	840*	1040	1380	700*	890	1210	280*	460	760
240	910*	1120	1480	650*	840	1170	850*	1050	1380	720*	910	1220	310*	480	770
210	920*	1130	1480	660*	860	1170	860*	1060	1390	730*	920	1220	330*	500	790
180	930*	1140	1480	680*	860	1180	870*	1070	1390	740*	920	1230	350*	520	790
150	930*	1140	1480	680*	870	1180	870*	1070	1390	740*	930	1230	370*	530	800
120	930*	1130	1480	680*	870	1180	870*	1070	1390	740*	920	1230	380*	530	800
90	920*	1130	1470	680*	860	1170	870*	1060	1380	740*	920	1220	380*	530	790
60	910*	1110	1450	670*	850	1150	850*	1040	1360	730*	900	1200	370*	520	780
30	880*	1080	1410	640*	820	1120	830*	1010	1330	700*	880	1170	360*	500	750
1	810*	1000	1330	580*	750	1050	760*	940	1250	640*	810	1100	310*	450	690

PERSONNEL CASUALTIES

MODERATE DAMAGE

SEVERE DAMAGE

HOB	IN MULTI-STORY BRICK APTS			IN WOOD FRAME BUILDINGS			2nd DEGREE BURNS		WHEELED VEHICLES		TOWED ARTY	MULTI STORY FACTORIES		
	IMMED	IMMED	LAT	IMMED	IMMED	LAT	SUMMER	WINTER	EXPO	SHLD		WOOD	BRICK	FACT-
	PERM	TRAN	LETH	PERM	TRAN	LETH	UNIFORM	UNIFORM				FRAME	APT	ORIES
600	1710	1710	1710	2230	2230	2230	1060	860	0	0	0	2230	1710	0
570	1700	1700	1700	2200	2200	2200	1090	900	0	0	0	2200	1700	0
540	1690	1690	1690	2170	2170	2170	1120	930	0	0	0	2170	1690	0
510	1670	1670	1670	2140	2140	2140	1140	960	0	0	0	2140	1670	0
480	1640	1640	1640	2100	2100	2100	1170	990	0	0	0	2100	1640	710
450	1600	1600	1600	2060	2060	2060	1190	1010	0	0	0	2060	1600	720
420	1560	1560	1560	2020	2020	2020	1210	1030	260	190	0	2020	1560	690
390	1520	1520	1520	1970	1970	1970	1230	1050	370	270	0	1970	1520	670
360	1470	1470	1470	1940	1940	1940	1240	1070	440	410	0	1940	1470	640
330	1430	1430	1430	1900	1900	1900	1260	1090	500	420	200	1900	1430	610
300	1390	1390	1390	1870	1870	1870	1270	1110	540	420	300	1870	1390	590
270	1360	1360	1400	1830	1830	1830	1280	1120	580	410	360	1830	1360	580
240	1320	1320	1410	1790	1790	1790	1290	1130	610	400	300	1790	1320	570
210	1290	1290	1420	1750	1750	1750	1300	1140	630	390	470	1750	1290	590
180	1250	1250	1420	1700	1700	1700	1310	1150	660	390	510	1700	1250	610
150	1220	1220	1420	1640	1640	1640	1320	1160	670	380	530	1640	1220	610
120	1190	1190	1420	1590	1590	1590	1320	1160	670	380	530	1590	1190	600
90	1160	1160	1400	1540	1540	1540	1280	1130	650	370	520	1540	1160	570
60	1130	1130	1390	1490	1490	1490	1240	1090	620	370	490	1490	1130	540
30	1100	1100	1350	1440	1440	1440	1210	1060	570	370	430	1440	1100	510
1	1070	1070	1270	1360	1360	1360	1170	1030	520	370	330	1360	1070	490

* Subtract 100 meters from the 8,000 rad RD to obtain the approximate 18,000 rad RD.

MEDIUM RANGE CANNON

8 KT

(9-74)

EFFECTS TABLES

(Distances in meters)

PRECLUDE						SAFETY RADII									
1-PSI OVER- PRES- SURE	MOD DAM FIXED BRG	FOREST BLOWDOWN		WILDLAND FIRES		UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			HOB
		DECID	CONIF	CLASS I	CLASS IV	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	
5480	0	2650	1930	4200	2690	7340	6770	4310	4200	3900	3030	4860	4240	1670	600
5490	0	2630	1920	4200	2700	7350	6770	4320	4210	3900	3040	4790	4190	1660	570
5390	840	2590	1900	4210	2710	7350	6780	4320	4220	3910	3050	4710	4130	1650	540
5300	840	2550	1870	4220	2720	7350	6780	4330	4230	3920	3060	4640	4060	1630	510
5200	850	2500	1840	4230	2740	7360	6790	4340	4230	3930	3070	4550	3990	1580	480
5090	850	2440	1790	4230	2750	7360	6790	4340	4240	3940	3080	4460	3920	1530	450
4480	850	2370	1740	4240	2750	7370	6800	4350	4250	3940	3090	4370	3850	1500	420
4470	850	2310	1680	4240	2760	7370	6800	4360	4250	3950	3100	4280	3770	1470	390
4750	840	2250	1620	4250	2770	7370	6800	4360	4260	3950	3110	4180	3680	1440	360
4630	840	2190	1560	4250	2780	7370	6810	4370	4260	3960	3110	4070	3600	1490	330
4510	830	2140	1510	4260	2780	7380	6810	4370	4270	3960	3120	3970	3510	1500	300
4390	820	2080	1470	4260	2790	7380	6810	4370	4270	3970	3120	3860	3410	1510	270
4270	810	2030	1430	4270	2800	7380	6810	4380	4270	3970	3130	3750	3310	1520	240
4140	800	1970	1390	4270	2800	7380	6820	4380	4280	3980	3130	3640	3210	1530	210
4020	790	1920	1340	4270	2800	7390	6820	4380	4280	3980	3140	3520	3110	1530	180
3900	770	1860	1310	4270	2810	7390	6820	4380	4280	3980	3140	3410	3010	1530	150
3770	760	1810	1270	4240	2780	7320	6760	4350	4250	3950	3110	3300	2910	1520	120
3650	740	1750	1240	4150	2710	7150	6610	4260	4160	3870	3040	3180	2810	1510	90
3520	730	1680	1220	4060	2640	6980	6450	4170	4070	3780	2960	3070	2710	1490	60
3390	710	1620	1190	3970	2570	6810	6300	4070	3980	3700	2880	2950	2600	1450	30
3270	690	1580	1120	3880	2500	6640	6150	3980	3890	3610	2810	2840	2500	1380	1

SEVERE DAMAGE															
BRIDGES		SUPPLY DEPOTS	SURFACE TO AIR MISSILES		MISSILES & ROCKETS		HELICOPTERS RANDOMLY PARKED		RADIOS & FIRE CON EQUIP	OPEN GRID RADAR ANT	TRACKED VEHICLES (no tanks)		RAILROAD BOX & FLAT CARS		HOB
FIXED	FLTG		EXPO	RVTTD	TVLG	ERECT	CGO TRANS	LT OBSN			EXPO	SHLD	LOCO		
0	0	0	460	0	0	1850	1470	2460	0	2410	0	0	0	0	600
0	0	0	510	0	0	1850	1450	2410	0	2400	0	0	0	0	570
0	0	0	550	40	0	1840	1420	2350	0	2380	0	0	0	0	540
0	0	0	590	90	0	1830	1400	2300	170	2340	0	0	0	0	510
0	0	0	630	130	0	1780	1370	2250	310	2300	0	0	0	70	480
0	0	0	660	180	0	1730	1340	2190	390	2260	0	0	0	140	450
0	0	0	690	220	290	1680	1310	2140	460	2210	0	0	0	210	420
0	0	0	720	260	420	1650	1270	2080	510	2170	0	0	0	260	390
400	440	0	740	300	490	1610	1240	2030	560	2120	0	0	0	310	360
400	450	0	750	330	550	1580	1200	1970	610	2080	0	0	0	360	330
400	460	70	760	360	610	1540	1160	1920	650	2030	110	110	0	420	300
390	460	110	770	390	640	1500	1120	1860	680	1980	210	210	0	490	270
380	460	160	770	410	670	1470	1090	1810	710	1930	290	260	20	550	240
370	460	190	770	430	710	1430	1050	1750	740	1880	350	260	80	600	210
370	450	230	760	450	730	1400	1020	1700	750	1830	390	250	130	630	180
360	430	260	750	460	750	1360	1000	1640	760	1770	420	240	180	650	150
340	410	280	730	450	750	1330	970	1590	760	1720	430	240	220	640	120
330	400	290	700	410	730	1280	950	1540	750	1660	420	230	240	600	90
310	380	290	670	380	690	1240	930	1490	720	1610	400	230	240	490	60
300	370	240	640	360	640	1200	900	1440	680	1550	350	230	220	410	30
290	360	130	630	350	580	1160	880	1390	630	1500	280	230	150	380	1

** Nuclear radiation effects are significant. If troops have history of previous exposure, consult figure 15-8 for modification of risk radii.

FREE FLIGHT ROCKET

5 KT

(8-59)

EFFECTS TABLES

(Distances in meters)

PERSONNEL CASUALTIES

HOB	EXPOSED			IN OPEN FOXHOLES			IN APC'S			IN TANKS			IN EARTH SHELTERS		
	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT
	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH
400	430*	720	1120	0	320	770	330*	630	1020	0	420	840	0	0	180
470	480*	750	1150	0	380	800	400*	670	1050	150*	480	870	0	0	270
540	530*	790	1170	90*	440	840	450*	710	1080	240*	530	900	0	0	340
610	570*	820	1190	190*	490	870	500*	740	1100	310*	570	930	0	0	390
680	610*	850	1220	270*	530	890	540*	770	1130	370*	610	950	0	0	440
750	650*	870	1230	330*	570	920	580*	800	1150	420*	640	980	0	30	490
820	680*	900	1250	380*	600	940	610*	830	1160	460*	670	1000	0	130	520
890	700*	920	1270	420*	630	960	640*	850	1180	500*	700	1020	0	210	560
960	730*	940	1280	450*	660	980	670*	870	1200	530*	730	1040	0	260	590
1030	750*	960	1300	490*	680	1000	690*	890	1210	560*	750	1050	80*	310	610
1100	770*	970	1310	510*	700	1010	710*	910	1220	580*	770	1070	140*	340	640
1170	790*	990	1320	540*	720	1030	730*	920	1240	600*	780	1080	190*	380	660
1240	800*	1000	1330	560*	740	1040	750*	930	1240	620*	800	1090	230*	400	670
1310	810*	1010	1330	570*	750	1050	760*	940	1250	630*	810	1100	260*	420	690
1380	820*	1010	1340	580*	760	1050	770*	950	1250	640*	820	1100	290*	440	690
1450	820*	1010	1340	590*	760	1050	770*	950	1250	650*	820	1100	300*	450	700
1520	820*	1010	1330	590*	760	1050	770*	950	1250	650*	820	1100	310*	450	700
1590	820*	1000	1320	590*	760	1040	770*	940	1240	650*	820	1090	320*	450	700
1660	800*	990	1300	580*	740	1030	750*	930	1230	640*	800	1080	310*	450	690
1730	780*	960	1270	560*	720	1000	730*	900	1190	620*	780	1050	300*	430	660
1800	710*	890	1190	500*	660	930	670*	830	1120	560*	710	980	260*	380	600

PERSONNEL CASUALTIES

MODERATE DAMAGE

SEVERE DAMAGE

HOB	IN MULTI-STORY BRICK APTS			IN WOOD FRAME BUILDINGS			2nd DEGREE BURNS		WHEELED VEHICLES		TOWED ARTY		MULTI STORY FACTORIES		
	IMMED	IMMED	LAT	IMMED	IMMED	LAT	SUMMER	WINTER	EXPO	SHLD	TANKS	TOWED	WOOD	STORY	FACT-
	PERM	TRAN	LETH	PERM	TRAN	LETH	UNIFORM	UNIFORM	EXPO	SHLD	TANKS	ARTY	FRAME	BRICK	ORIES
400	1300	1300	1300	1850	1850	1850	730	530	0	0	0	0	1850	1300	0
470	1360	1360	1360	1840	1840	1840	760	580	0	0	0	0	1840	1360	0
540	1380	1380	1380	1820	1820	1820	800	620	0	0	0	0	1820	1380	0
610	1390	1390	1390	1800	1800	1800	830	660	0	0	0	0	1800	1390	0
680	1380	1380	1380	1770	1770	1770	860	700	0	0	0	0	1770	1380	0
750	1370	1370	1370	1740	1740	1740	880	730	0	0	0	0	1740	1370	0
820	1340	1340	1340	1710	1710	1710	910	750	0	0	0	0	1710	1340	0
890	1300	1300	1300	1670	1670	1670	930	780	0	0	0	0	1670	1300	530
960	1260	1260	1260	1630	1630	1630	950	800	190	150	0	0	1630	1260	520
1030	1220	1220	1240	1590	1590	1590	970	820	290	290	0	0	1590	1220	500
1100	1180	1180	1250	1550	1550	1550	980	840	350	340	70	0	1550	1180	470
1170	1140	1140	1260	1520	1520	1520	1000	860	400	340	190	0	1520	1140	450
1240	1110	1110	1270	1490	1490	1490	1010	870	440	330	260	140	1490	1110	430
1310	1070	1070	1280	1450	1450	1450	1020	880	470	320	310	220	1450	1070	430
1380	1040	1040	1280	1410	1410	1410	1030	890	490	320	360	270	1410	1040	440
1450	1010	1010	1280	1360	1360	1360	1040	900	510	310	400	310	1360	1010	460
1520	980	980	1270	1310	1310	1310	1040	910	520	300	410	340	1310	980	460
1590	950	960	1260	1270	1270	1270	1030	900	520	300	410	350	1270	950	440
1660	920	940	1250	1230	1230	1260	1080	860	490	300	390	350	1230	920	420
1730	890	920	1220	1180	1180	1230	1040	820	450	300	340	320	1180	890	390
1800	870	870	1140	1130	1160	1150	890	780	400	300	260	250	1100	870	360

* Subtract 100 meters from the 8,000 rad RD to obtain the approximate 18,000 rad RD.

FREE FLIGHT ROCKET

5 KT

(8-59)

EFFECTS TABLES

(Distances in meters)

PRELUDE						SAFETY RADII									
1-PSI OVER- PRES- SURE	MOD DAM FIXED BRG	FOREST BLOWDOWN		WILDLAND FIRES		UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			HOB
		DECID	CONIF	CLASS I	CLASS IV	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	
4700	0	2150	0	3390	2070	5020	5370	3440	3410	3140	2370	4140	3600	1200	600
4720	0	2150	1320	3400	2090	5020	5380	3450	3420	3150	2380	4090	3560	1320	570
4640	0	2130	1520	3410	2100	5030	5380	3460	3430	3160	2400	4030	3510	1330	540
4560	0	2120	1540	3420	2110	5030	5390	3470	3430	3170	2410	3970	3470	1360	510
4470	0	2090	1540	3430	2130	5040	5390	3470	3440	3180	2420	3900	3410	1350	480
4380	350	2060	1520	3440	2140	5040	5400	3480	3450	3190	2430	3830	3350	1340	450
4280	700	2020	1490	3440	2150	5050	5400	3490	3460	3190	2440	3750	3290	1300	420
4180	690	1970	1450	3450	2160	5050	5410	3500	3460	3200	2450	3670	3220	1310	390
4080	680	1910	1400	3460	2170	5050	5410	3500	3470	3210	2460	3580	3150	1330	360
3970	670	1860	1330	3460	2180	5060	5410	3510	3470	3210	2460	3490	3070	1340	330
3860	660	1810	1270	3470	2180	5060	5420	3510	3480	3220	2470	3390	2990	1350	300
3740	640	1760	1220	3470	2190	5060	5420	3520	3480	3220	2480	3290	2910	1360	270
3630	640	1710	1180	3470	2200	5060	5420	3520	3490	3230	2480	3190	2820	1370	240
3510	630	1660	1140	3480	2200	5070	5430	3520	3490	3230	2490	3080	2720	1380	210
3390	630	1600	1100	3480	2210	5070	5430	3530	3490	3230	2490	2980	2630	1380	180
3270	630	1540	1070	3480	2210	5070	5430	3530	3500	3240	2490	2870	2530	1380	150
3150	620	1490	1040	3490	2220	5070	5430	3530	3500	3240	2500	2760	2440	1370	120
3030	600	1430	1010	3410	2160	5050	5330	3460	3430	3170	2440	2650	2340	1360	90
2910	570	1370	990	3300	2080	5060	5160	3340	3310	3050	2350	2540	2240	1340	60
2790	550	1320	960	3180	1990	5060	5000	3230	3190	2940	2250	2430	2140	1310	30
2670	530	1300	910	3060	1910	5170	4830	3110	3080	2820	2160	2320	2040	1230	0

SEVERE DAMAGE															
BRIDGES		SUPPLY DEPOTS	SURFACE TO AIR MISSILES		MISSILES & ROCKETS		HELICOPTERS RANDOMLY PARKED		RADIOS & FIRE CON EQUIP	OPEN GRID RADAR ANT	TRACKED VEHICLES (no tanks)		RAILROAD BOX & FLAT CARS		HOB
FIXED	FLTG		EXPO	RVTTD	TVLG	ERECT	CGO TRANS	LT OBSN			EXPO	SHLD	LOCO	CARS	
0	0	0	180	0	0	430	800	2110	0	1880	0	0	0	0	600
0	0	0	250	0	0	1380	1210	2080	0	1900	0	0	0	0	570
0	0	0	310	0	0	1450	1210	2040	0	1910	0	0	0	0	540
0	0	0	360	0	0	1460	1190	1990	0	1900	0	0	0	0	510
0	0	0	430	0	0	1460	1170	1950	0	1890	0	0	0	0	480
0	0	0	440	40	0	1450	1150	1890	50	1870	0	0	0	0	450
0	0	0	480	90	0	1420	1120	1840	200	1830	0	0	0	0	420
0	0	0	510	130	0	1370	1090	1790	290	1790	0	0	0	90	390
0	0	0	540	170	0	1330	1060	1740	350	1750	0	0	0	150	360
0	0	0	560	210	320	1290	1030	1690	400	1710	0	0	0	200	330
0	310	0	580	240	390	1260	990	1630	440	1660	0	0	0	250	300
300	320	20	590	280	440	1230	960	1580	490	1620	30	30	0	300	270
300	330	70	600	300	480	1190	920	1530	520	1580	130	130	0	360	240
200	340	110	600	330	510	1160	890	1480	550	1530	210	210	0	410	210
200	350	140	600	350	540	1130	850	1420	570	1480	270	200	50	460	180
200	350	170	590	370	560	1100	820	1370	590	1430	310	200	100	500	150
200	340	200	580	370	570	1060	800	1320	600	1380	330	190	150	500	120
270	320	220	560	350	560	1030	780	1270	590	1330	330	190	180	490	90
250	300	220	530	310	540	090	760	1220	570	1280	320	180	180	420	60
230	280	190	500	290	490	050	730	1170	530	1230	280	180	170	320	30
210	270	90	490	280	440	010	710	1130	490	1180	210	180	110	290	0

** Nuclear radiation effects are significant. If troops have history of previous exposure, consult figure 15-8 for modification of risk radii.

FREE FLIGHT ROCKET

20 KT

(9-105)

EFFECTS TABLES

(Distances in meters)

PERSONNEL CASUALTIES															
HOB	EXPOSED			IN OPEN FOXHOLES			IN APC'S			IN TANKS			IN EARTH SHELTERS		
	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT
	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH
600	700*	960	1350	340*	610	1000	620*	860	1240	430*	680	1040	U	n	510
570	740*	980	1370	390*	650	1020	650*	890	1260	470*	710	1070	U	100	550
540	770*	1010	1390	440*	680	1050	690*	920	1280	510*	740	1090	U	180	590
510	790*	1030	1410	480*	710	1070	720*	940	1300	550*	770	1110	U	240	620
480	820*	1050	1420	510*	740	1090	740*	960	1310	580*	800	1130	U	290	650
450	840*	1070	1440	550*	760	1110	770*	990	1330	610*	820	1150	80*	340	680
420	870*	1090	1450	570*	790	1130	790*	1000	1350	640*	840	1170	150*	380	710
390	890*	1100	1460	600*	810	1140	810*	1020	1360	660*	860	1180	200*	410	730
360	900*	1120	1480	620*	830	1160	830*	1040	1370	690*	880	1200	240*	440	750
330	920*	1130	1490	650*	840	1170	850*	1050	1380	710*	900	1210	280*	470	770
300	930*	1140	1500	660*	860	1180	860*	1060	1390	720*	910	1220	310*	490	790
270	940*	1150	1500	680*	870	1190	880*	1080	1400	740*	930	1230	340*	510	800
240	950*	1160	1510	690*	880	1200	890*	1080	1410	750*	940	1240	360*	530	810
210	960*	1170	1510	700*	890	1210	900*	1090	1410	760*	940	1240	380*	540	820
180	970*	1170	1510	710*	900	1210	900*	1090	1410	770*	950	1250	390*	550	830
150	970*	1170	1510	710*	900	1210	900*	1100	1410	770*	950	1250	400*	560	830
120	960*	1170	1510	710*	900	1200	900*	1090	1410	770*	950	1240	400*	560	830
90	960*	1160	1490	710*	890	1190	890*	1080	1400	760*	940	1230	400*	560	820
60	940*	1140	1470	700*	870	1180	880*	1070	1380	750*	930	1220	390*	540	810
30	910*	1110	1440	670*	850	1140	850*	1040	1350	730*	900	1190	370*	520	780
0	840*	1030	1350	610*	780	1070	780*	960	1270	660*	830	1110	320*	460	710

PERSONNEL CASUALTIES															
HOB	IN MULTI-STORY BRICK APTS			IN WOOD FRAME BUILDINGS			2nd DEGREE BURNS		WHEELED VEHICLES		MODERATE DAMAGE		SEVERE DAMAGE		
	IMMED	IMMED	LAT	IMMED	IMMED	LAT	SUMMER	WINTER	EXPO	SHLD	TANKS	TOWED ARTY	WOOD FRAME BLDG	MULTI STORY BRICK APT	FACTORIES
	PERM	TRAN	LETH	PERM	TRAN	LETH	UNIFORM	UNIFORM							
600	2020	2020	2020	2620	2620	2620	1600	1370	0	0	0	0	2620	2020	980
570	1980	1980	1980	2580	2580	2580	1620	1390	330	220	0	0	2580	1980	960
540	1940	1940	1940	2540	2540	2540	1640	1410	460	280	0	0	2540	1940	930
510	1890	1890	1890	2500	2500	2500	1650	1430	530	480	0	0	2500	1890	910
480	1860	1860	1860	2470	2470	2470	1670	1440	600	500	100	0	2470	1860	890
450	1820	1820	1820	2430	2430	2430	1680	1460	650	510	250	0	2430	1820	860
420	1780	1780	1780	2400	2400	2400	1690	1470	700	500	350	40	2400	1780	840
390	1750	1750	1750	2360	2360	2360	1700	1480	740	500	430	210	2360	1750	820
360	1710	1710	1710	2330	2330	2330	1710	1500	770	490	480	310	2330	1710	810
330	1680	1680	1680	2290	2290	2290	1720	1510	800	480	530	390	2290	1680	800
300	1650	1650	1650	2240	2240	2240	1730	1520	830	480	590	440	2240	1650	810
270	1610	1610	1610	2200	2200	2200	1740	1530	860	470	640	490	2200	1610	830
240	1580	1580	1580	2150	2150	2150	1750	1540	890	460	690	530	2150	1580	840
210	1540	1540	1540	2100	2100	2100	1750	1540	890	460	700	560	2100	1540	830
180	1510	1510	1510	2050	2050	2050	1760	1540	900	450	710	590	2050	1510	820
150	1490	1490	1490	2010	2010	2010	1760	1530	890	450	710	610	2010	1490	800
120	1460	1460	1460	1960	1960	1960	1720	1510	870	450	690	610	1960	1460	780
90	1440	1440	1440	1910	1910	1910	1700	1490	840	450	660	610	1910	1440	760
60	1410	1410	1410	1850	1850	1850	1680	1480	800	440	610	570	1850	1410	730
30	1380	1380	1380	1810	1810	1810	1660	1460	740	440	540	510	1810	1380	700
0	1340	1340	1340	1740	1740	1740	1630	1440	690	440	450	430	1740	1340	670

FREE FLIGHT ROCKET

20 KT

(9-105)

EFFECTS TABLES

(Distances in meters)

PRECLUDE						SAFETY RADII										
I-PSI OVER- PRES- SURE	MOD DAM FIXED BRG	FOREST BLOWDOWN		WILDLAND FIRES		UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			HOB	
		DECID	CONIF	CLASS I	CLASS IV	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER		
6410	1080	3260	2430	5400	3590	10440	9520	5710	5390	4980	3950	5620	4940	1910	600	
6310	1080	3150	2380	5410	3600	10440	9520	5720	5390	4980	3960	5540	4870	1880	570	
6200	1070	3080	2320	5410	3610	10440	9530	5720	5400	4990	3970	5450	4790	1850	540	
6090	1070	3030	2270	5420	3620	10450	9530	5730	5400	5000	3970	5360	4720	1830	510	
5980	1060	2980	2230	5420	3630	10450	9530	5730	5410	5000	3980	5260	4640	1800	480	
5870	1050	2930	2180	5430	3630	10450	9540	5740	5410	5010	3990	5160	4560	1770	450	
5760	1040	2880	2130	5430	3640	10450	9540	5740	5420	5010	3990	5060	4470	1740	420	
5640	1030	2820	2090	5430	3640	10460	9540	5750	5420	5010	4000	4960	4380	1710	390	
5530	1020	2770	2050	5440	3650	10460	9540	5750	5420	5020	4000	4860	4290	1680	360	
5420	1010	2710	2000	5440	3650	10460	9540	5750	5430	5020	4010	4760	4200	1650	330	
5300	1010	2660	1960	5440	3660	10460	9550	5760	5430	5030	4010	4650	4110	1620	300	
5190	1000	2600	1910	5450	3660	10460	9550	5760	5430	5030	4010	4550	4020	1590	270	
5070	990	2550	1870	5450	3670	10460	9550	5760	5440	5030	4020	4440	3920	1560	240	
4960	980	2500	1820	5450	3670	10470	9550	5760	5440	5030	4020	4340	3830	1530	210	
4840	970	2450	1770	5440	3660	10430	9520	5750	5420	5020	4010	4230	3730	1500	180	
4720	960	2400	1730	5380	3630	10410	9410	5690	5370	4980	3970	4120	3640	1470	150	
4600	930	2380	1690	5330	3600	10190	9300	5630	5320	4930	3940	4020	3540	1440	120	
4490	910	2310	1670	5280	3560	10170	9190	5570	5260	4880	3900	3910	3440	1410	90	
4370	890	2180	1650	5220	3530	9950	9080	5510	5210	4830	3860	3800	3350	1380	60	
4250	870	2130	1630	5170	3490	9830	8970	5450	5150	4790	3820	3690	3250	1350	30	
4130	850	2110	1560	5110	3460	9710	8860	5390	5100	4740	3780	3580	3150	1320	0	

SEVERE DAMAGE															
BRIDGES		SUPPLY DEPOTS	SURFACE TO AIR MISSILES		MISSILES & ROCKETS		HELICOPTERS RANDOMLY PARKED		RADIOS & FIRE CON EQUIP	OPEN GRID RADAR ANT	TRACKED VEHICLES (no tanks)		RAILROAD BOX & FLAT CARS		HOB
FIXED	FLTG		EXPO	RVTTD	TVLG	ERECT	CGO TRANS	LT OBSN			EXPO	SHLD	LOCO	CARS	
0	0	0	900	210	0	2310	1680	2760	540	3020	0	0	0	210	600
580	0	0	920	250	410	2260	1650	2710	600	2980	0	0	0	270	570
580	610	0	950	290	550	2230	1620	2660	660	2930	0	0	0	320	540
590	630	0	970	330	630	2190	1590	2610	710	2890	0	0	0	370	510
580	630	0	990	360	710	2160	1550	2560	760	2840	0	0	0	420	480
570	630	0	1000	390	770	2130	1510	2500	800	2800	0	0	0	470	450
560	630	50	1010	420	820	2090	1480	2450	850	2750	90	90	0	530	420
550	620	110	1020	440	870	2050	1440	2400	880	2710	200	200	0	600	390
540	620	150	1030	470	900	2010	1410	2350	910	2660	290	290	0	660	360
530	620	190	1030	490	940	1980	1370	2300	940	2610	370	300	0	720	330
530	620	230	1030	510	970	1940	1340	2240	970	2560	440	300	60	770	300
520	620	260	1020	530	1000	1910	1300	2190	990	2500	490	300	120	820	270
520	610	300	1010	550	1020	1880	1280	2140	1010	2450	520	290	170	850	240
520	600	330	1000	550	1040	1840	1260	2090	1020	2400	550	280	220	860	210
510	590	360	990	550	1040	1800	1240	2040	1020	2340	570	280	270	860	180
490	570	370	960	530	1040	1760	1210	1990	1010	2290	570	270	300	840	150
480	550	390	930	490	1010	1720	1190	1940	990	2230	550	270	310	790	120
460	530	380	900	470	980	1680	1170	1890	970	2180	540	270	320	680	90
450	520	350	880	440	930	1630	1150	1850	930	2130	500	260	310	590	60
430	510	160	850	430	870	1590	1130	1800	890	2070	440	260	270	520	30
420	500	160	840	420	810	1550	1110	1750	840	2010	360	260	190	490	0

** Nuclear radiation effects are significant. If troops have history of previous exposure, consult figure 15-8 for modification of risk radii.

GUIDED MISSILE 10 KT (9-80)

EFFECTS TABLES (Distances in meters)

PERSONNEL CASUALTIES															
HOB	EXPOSED			IN OPEN FOXHOLES			IN APC'S			IN TANKS			IN EARTH SHELTERS		
	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT
	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH
577	640*	400	1310	230*	540	950	550*	810	1200	340*	620	1010	0	0	440
527	700*	450	1340	340*	610	1000	620*	870	1240	440*	690	1050	0	0	520
452	780*	1010	1390	460*	700	1060	710*	930	1290	540*	770	1110	0	230	610
402	820*	1050	1410	520*	740	1090	750*	970	1320	600*	810	1140	40*	320	660
352	860*	1080	1440	570*	780	1120	790*	1000	1340	640*	850	1170	170*	390	710
277	900*	1110	1460	630*	830	1150	840*	1040	1370	700*	890	1200	280*	460	760
227	920*	1130	1480	660*	850	1170	860*	1050	1380	720*	910	1220	320*	500	780
117	810*	1040	1410	510*	730	1080	740*	960	1310	580*	800	1130	0	300	650
367	850*	1070	1430	560*	770	1110	780*	990	1330	630*	840	1160	140*	370	690
292	890*	1110	1460	620*	820	1150	830*	1030	1360	690*	880	1190	260*	450	750
242	910*	1120	1470	650*	840	1160	850*	1050	1380	710*	900	1210	310*	490	770
192	930*	1130	1480	670*	860	1170	870*	1060	1390	730*	920	1220	350*	510	790
177	930*	1140	1480	680*	860	1180	870*	1060	1390	740*	920	1220	360*	520	790
67	910*	1110	1450	670*	850	1150	850*	1040	1360	730*	900	1200	370*	520	780
0	810*	1000	1320	580*	750	1040	760*	940	1240	640*	810	1090	300*	440	690

PERSONNEL CASUALTIES															
HOB	IN MULTI-STORY BRICK APTS			IN WOOD FRAME BUILDINGS			2nd DEGREE BURNS		WHEELED VEHICLES		MODERATE DAMAGE		SEVERE DAMAGE		
	IMMED	IMMED	LAT	IMMED	IMMED	LAT	SUMMER	WINTER	EXPO	SHLD	TANKS	TOWED	WOOD	MULTI	FACT-
	PERM	TRAN	LETH	PERM	TRAN	LETH	UNIFORM	UNIFORM				ARTY	FRAME	STORY	ORIES
577	1780	1780	1780	2290	2290	2290	1190	1000	0	0	0	0	2290	1780	0
527	1730	1730	1730	2240	2240	2240	1230	1040	0	0	0	0	2240	1730	790
452	1640	1640	1640	2130	2130	2130	1280	1100	260	190	0	0	2130	1640	750
402	1570	1570	1570	2060	2060	2060	1310	1130	430	410	0	0	2060	1570	710
352	1510	1510	1510	2010	2010	2010	1340	1160	530	430	220	0	2010	1510	660
277	1410	1410	1410	1920	1920	1920	1370	1200	620	410	400	270	1920	1410	620
227	1350	1350	1410	1850	1850	1850	1380	1210	670	400	490	360	1850	1350	640
117	1590	1590	1590	2080	2080	2080	1300	1120	390	360	0	0	2080	1590	720
367	1530	1530	1530	2020	2020	2020	1330	1150	500	430	160	0	2020	1530	680
292	1430	1430	1430	1940	1940	1940	1360	1190	610	420	370	220	1940	1430	630
242	1370	1370	1410	1870	1870	1870	1380	1210	650	400	460	340	1870	1370	630
192	1310	1310	1420	1790	1790	1790	1390	1220	690	390	540	420	1790	1310	660
177	1300	1300	1420	1760	1760	1760	1400	1230	700	390	550	430	1760	1300	660
67	1190	1190	1390	1570	1570	1570	1330	1170	660	380	510	480	1570	1190	590
0	1120	1120	1270	1430	1430	1430	1250	1100	540	380	350	340	1430	1120	520

GUIDED MISSILE 10 KT (9-80)

EFFECTS TABLES

(Distances in meters)

PRECLUDE						SAFETY RADII										
1-PSI OVER- PRES- SURE	MOD DAM FIXED BRG	FOREST BLOWDOWN		WILDLAND FIRES		UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			HOB	
		DECID	CONIF	CLASS I	CLASS IV	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER		
5670	1070	2030	2020	4450	2900	7030	7270	4590	4450	4130	3250	4060	4340	1730	577	
5510	1040	2710	1970	4460	2920	7040	7280	4600	4460	4140	3270	4030	4230	1670	527	
5250	980	2520	1850	4470	2940	7050	7290	4620	4480	4160	3290	4010	4050	1570	452	
5060	940	2420	1760	4480	2960	7050	7300	4630	4490	4170	3300	4050	3920	1520	402	
4870	900	2320	1670	4490	2970	7060	7300	4630	4490	4180	3310	4080	3780	1480	352	
4570	870	2190	1560	4500	2980	7060	7310	4640	4500	4190	3330	4010	3550	1510	277	
4370	840	2090	1490	4510	2990	7070	7310	4650	4510	4190	3330	3930	3390	1520	227	
5120	950	2450	1790	4480	2950	7050	7300	4620	4480	4170	3300	4000	3960	1540	417	
4920	910	2350	1700	4490	2960	7060	7300	4630	4490	4170	3310	4030	3820	1490	367	
4630	870	2210	1580	4500	2980	7060	7310	4640	4500	4190	3320	4070	3600	1500	292	
4430	840	2120	1510	4510	2990	7070	7310	4650	4510	4190	3330	3990	3440	1520	242	
4230	800	2030	1430	4510	2990	7070	7310	4650	4510	4200	3340	3700	3270	1520	192	
4170	800	2010	1410	4510	3000	7070	7310	4650	4510	4200	3340	3650	3220	1520	177	
3720	790	1780	1300	4310	2840	7050	6950	4450	4310	4010	3170	3240	2850	1490	67	
3440	730	1670	1190	4130	2700	7180	6630	4260	4130	3840	3020	2990	2630	1370	0	

SEVERE DAMAGE																
BRIDGES		SUPPLY DEPOTS	SURFACE TO AIR MISSILES		MISSILES & ROCKETS		HELICOPTERS RANDOMLY PARKED		RADIOS & FIRE CON EQUIP	OPEN GRID RADAR ANT	TRACKED VEHICLES (no tanks)		RAILROAD BOX & FLAT CARS		HOB	
FIXED	FLTG		EXPO	RVTTD	TVLG	ERECT	CGO TRANS	LT OBSN			EXPO	SHLD	LOCO			
0	0	0	590	40	0	1060	1490	2470	0	2540	0	0	0	0	577	
0	0	0	650	110	0	1020	1440	2380	280	2470	0	0	0	20	527	
0	0	0	730	220	310	1790	1370	2250	480	2360	0	0	0	210	452	
440	460	0	770	280	490	1730	1310	2160	560	2290	0	0	0	290	402	
440	450	0	790	340	600	1680	1250	2070	640	2210	0	0	0	380	352	
400	450	130	820	410	700	1590	1160	1930	730	2090	250	250	0	540	277	
390	470	190	810	440	750	1530	1100	1840	780	2010	370	260	70	630	227	
440	430	0	760	260	450	1750	1330	2180	540	2310	0	0	0	270	417	
440	460	0	790	320	570	1700	1270	2090	620	2230	0	0	0	350	367	
410	450	110	810	390	680	1600	1180	1960	720	2120	210	210	0	510	292	
390	470	180	820	430	740	1550	1120	1870	770	2030	340	260	40	600	242	
410	490	230	800	470	780	1490	1070	1780	800	1940	410	250	130	670	192	
420	500	250	830	470	790	1470	1050	1750	800	1920	430	250	160	680	177	
360	420	300	710	390	740	1320	970	1560	760	1720	420	230	250	520	67	
300	380	120	670	360	620	1230	920	1460	670	1600	290	230	150	390	0	

** Nuclear radiation effects are significant. If troops have history of previous exposure, consult figure 15-8 for modification of risk radii.

GUIDED MISSILE

50 KT
(11-159)

EFFECTS TABLES

(Distances in meters)

PERSONNEL CASUALTIES															
HOB	EXPOSED			IN OPEN FOXHOLES			IN APC'S			IN TANKS			IN EARTH SHELTERS		
	IMMED PERM	IMMED TRAN	LAT LETH	IMMED PERM	IMMED TRAN	LAT LETH	IMMED PERM	IMMED TRAN	LAT LETH	IMMED PERM	IMMED TRAN	LAT LETH	IMMED PERM	IMMED TRAN	LAT LETH
737	920	1040	1470	320*	640	1080	650*	920	1330	420*	710	1110	0	0	530
687	950	1090	1510	420*	710	1130	710*	980	1370	500*	770	1160	0	90	600
612	980*	1150	1560	540*	800	1190	800*	1050	1430	610*	850	1220	0	280	700
562	940*	1100	1500	600*	850	1230	850*	1090	1460	670*	900	1250	60*	360	750
512	980*	1220	1610	660*	890	1260	890*	1120	1490	720*	940	1290	180*	440	800
437	1030*	1270	1650	720*	940	1300	950*	1170	1520	780*	990	1330	360	520	860
387	1060*	1290	1670	760*	980	1320	980*	1190	1540	820*	1020	1350	360*	570	890
464	1010*	1250	1640	700*	930	1290	930*	1150	1510	760*	980	1310	370	490	840
414	1040*	1280	1660	740*	960	1310	960*	1180	1530	800*	1010	1340	350	540	870
339	1080*	1310	1680	790*	1000	1340	1000*	1210	1560	850*	1050	1370	410*	600	920
289	1100*	1330	1700	820*	1020	1360	1020*	1230	1580	870*	1070	1390	450*	630	940
239	1120*	1340	1710	840*	1040	1370	1040*	1250	1590	890*	1080	1400	480*	660	960
164	1130*	1350	1710	850*	1050	1380	1050*	1250	1590	900*	1090	1410	510*	680	970
114	1120*	1340	1700	850*	1040	1370	1050*	1250	1580	900*	1090	1400	510*	680	970
0	980*	1190	1540	730*	910	1230	920*	1110	1430	780*	960	1260	410*	570	840

PERSONNEL CASUALTIES															
HOB	IN MULTI-STORY BRICK APTS			IN WOOD FRAME BUILDINGS			2nd DEGREE BURNS		WHEELED VEHICLES		MOODERATE DAMAGE		SEVERE DAMAGE		
	IMMED PERM	IMMED TRAN	LAT LETH	IMMED PERM	IMMED TRAN	LAT LETH	SUMMER UNIFORM	WINTER UNIFORM	EXPO	SHLD	TANKS	TOWED ARTY	WOOD FRAME BLDG	MULTI STORY BRICK APT	FACTORIES
737	2720	2720	2720	3580	3580	3580	2410	2090	720	430	0	0	3580	2720	1460
687	2660	2660	2660	3520	3520	3520	2430	2110	860	700	0	0	3520	2660	1420
612	2560	2560	2560	3430	3430	3430	2460	2150	1020	740	430	0	3430	2560	1370
562	2500	2500	2500	3370	3370	3370	2480	2170	1110	740	600	190	3370	2500	1330
512	2440	2440	2440	3300	3300	3300	2500	2190	1170	720	730	430	3300	2440	1300
437	2370	2370	2370	3200	3200	3200	2530	2220	1250	710	870	650	3200	2370	1280
387	2310	2310	2310	3120	3120	3120	2540	2230	1300	690	970	740	3120	2310	1290
464	2400	2400	2400	3240	3240	3240	2520	2210	1220	710	820	590	3240	2400	1290
414	2340	2340	2340	3160	3160	3160	2530	2230	1280	700	910	690	3160	2340	1290
339	2250	2250	2250	3040	3040	3040	2550	2250	1340	680	1050	820	3040	2250	1300
289	2190	2190	2190	2960	2960	2960	2560	2260	1370	670	1090	890	2960	2190	1300
239	2140	2140	2140	2890	2890	2890	2560	2260	1380	670	1100	940	2890	2140	1270
164	2070	2070	2070	2770	2770	2770	2550	2250	1340	660	1070	960	2770	2070	1220
114	2030	2030	2030	2690	2690	2690	2540	2240	1280	660	1010	950	2690	2030	1180
0	1900	1900	1900	2460	2460	2460	2500	2210	1070	650	720	700	2460	1900	1070

* Subtract 100 meters from the 8,000 rad RD to obtain the approximate 18,000 rad RD.

GUIDED MISSILE

50 KT

(11-159)

EFFECTS TABLES

(Distances in meters)

PRECLUDE						SAFETY RADII									
I-PSI OVER- PRES- SURE	MOD DAM FIXED BRG	FOREST BLOWDOWN		WILDLAND FIRES		UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			HOB
		DECID	CONIF	CLASS I	CLASS IV	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	
8590	1570	4600	3400	7900	5020	15990	14570	8690	7840	7180	5520	7550	6650	2630	737
8410	1550	4490	3330	7910	5030	15000	14580	8700	7850	7190	5530	7400	6520	2590	687
8120	1520	4340	3240	7920	5050	15000	14590	8710	7860	7200	5550	7150	6310	2510	612
7930	1490	4230	3180	7930	5060	15000	14590	8720	7870	7200	5550	6980	6170	2460	562
7740	1470	4130	3110	7930	5070	15010	14590	8720	7870	7210	5560	6810	6020	2410	512
7450	1450	3970	3000	7940	5080	15010	14600	8730	7880	7220	5570	6550	5790	2330	437
7260	1450	3950	2930	7950	5090	15010	14600	8730	7880	7230	5580	6370	5630	2280	387
7560	1460	4030	3040	7940	5080	15010	14600	8730	7880	7220	5570	6640	5870	2360	464
7360	1450	3920	2970	7940	5090	15010	14600	8730	7880	7220	5580	6470	5720	2310	414
7070	1440	3740	2860	7950	5100	15020	14600	8740	7890	7230	5590	6200	5480	2230	334
6880	1430	3630	2790	7950	5100	15020	14600	8740	7890	7230	5590	6020	5320	2180	284
6680	1400	3530	2710	7930	5090	15070	14550	8710	7860	7210	5580	5840	5160	2130	234
6380	1350	3330	2610	7860	5060	15750	14430	8640	7800	7160	5540	5570	4920	2040	164
6180	1320	3210	2560	7820	5030	15670	14350	8590	7760	7120	5510	5390	4750	1970	114
5720	1220	3110	2440	7720	4980	15080	14170	8470	7660	7030	5450	4970	4380	1840	0

SEVERE DAMAGE															
BRIDGES		SUPPLY DEPOTS	SURFACE TO AIR MISSILES		MISSILES & ROCKETS		HELICOPTERS RANDOMLY PARKED		RADIOS & FIRE CON EQUIP	OPEN GRID RADAR ANT	TRACKED VEHICLES (no tanks)		RAILROAD BOX & FLAT CARS		HOB
FIXED	FLTG		EXPO	RVTTD	TVLG	ERECT	CGO TRANS	LT OBSN			EXPO	SHLD	LOCO	CARS	
1020	1070	0	1450	440	890	3330	2300	3740	1020	4360	0	0	0	520	737
1000	1070	0	1490	500	1060	3260	2240	3650	1110	4280	0	0	0	610	687
980	1040	20	1530	580	1240	3170	2140	3520	1240	4160	0	0	0	750	612
950	1030	160	1550	630	1340	3110	2080	3430	1310	4080	240	240	0	870	562
940	1020	250	1570	670	1420	3040	2020	3340	1380	3990	420	420	0	980	512
920	1020	360	1570	730	1510	2950	1940	3210	1460	3860	630	460	90	1140	437
920	1020	420	1570	770	1570	2880	1880	3120	1500	3760	750	460	190	1230	387
920	1020	330	1570	710	1480	2980	1970	3250	1430	3910	560	460	30	1080	464
920	1020	390	1570	750	1540	2920	1910	3170	1480	3820	690	460	140	1180	414
930	1030	480	1550	800	1620	2820	1830	3040	1530	3670	810	450	290	1290	334
930	1010	540	1530	910	1650	2760	1790	2950	1550	3580	870	430	380	1320	284
910	990	590	1500	800	1660	2690	1760	2860	1550	3480	890	420	470	1320	234
870	940	630	1430	720	1620	2580	1690	2740	1520	3340	870	410	520	1220	164
840	900	620	1380	680	1550	2500	1660	2660	1470	3240	850	410	530	1020	114
760	840	300	1290	620	1300	2330	1580	2480	1290	3010	600	410	340	790	0

GUIDED MISSILE

100 KT

(11-218)

EFFECTS TABLES

(Distances in meters)

PERSONNEL CASUALTIES															
HOB	EXPOSED			IN OPEN FOXHOLES			IN APC'S			IN TANKS			IN EARTH SHELTERS		
	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT
	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH
A38	1400	1400	1600	330*	690	1170	690*	990	1440	420*	750	1190	0	0	550
7A8	1290	1290	1640	440*	770	1220	760*	1050	1490	520*	820	1240	0	40	640
713	1150	1260	1700	570*	860	1290	860*	1130	1550	640*	910	1310	80	270	750
663	1080	1300	1730	640*	920	1330	920*	1180	1580	710*	960	1350	200	370	810
613	1070*	1340	1760	710*	970	1370	970*	1220	1620	770*	1010	1390	500	500	860
538	1130*	1390	1800	790*	1030	1420	1030*	1270	1660	840*	1070	1440	500	550	930
4A8	1160*	1420	1830	830*	1070	1450	1080	1300	1680	890*	1110	1470	490	610	970
614	1070*	1340	1760	710*	970	1370	860*	1220	1620	770*	1010	1390	490	490	860
564	1110*	1370	1790	760*	1010	1400	1010*	1250	1640	820*	1050	1420	510	520	910
4A9	1160*	1420	1830	830*	1070	1450	1070	1300	1680	880*	1110	1460	490	610	970
439	1190*	1440	1850	870*	1100	1470	1150	1330	1710	920*	1140	1490	470	550	1000
3A9	1320	1460	1870	900*	1130	1500	1220	1350	1730	950*	1170	1510	460*	590	1030
314	1420	1490	1890	940*	1160	1520	1280	1380	1750	990*	1200	1540	540*	740	1070
264	1270*	1510	1900	960*	1180	1540	1280	1400	1760	1010*	1220	1550	570*	770	1090
0	1270	1350	1720	850*	1050	1380	1050*	1260	1600	900*	1090	1410	500*	670	970

PERSONNEL CASUALTIES															
HOB	IN MULTI-STORY BRICK APTS			IN WOOD FRAME BUILDINGS			2nd DEGREE BURNS		WHEELED VEHICLES		MODERATE DAMAGE		SEVERE DAMAGE		
	IMMED	IMMED	LAT	IMMED	IMMED	LAT	SUMMER	WINTER	EXPO	SHLD	TANKS	TOWED ARTY	WOOD FRAME BLDG	MULTI STORY BRICK APT	FACTORIES
	PERM	TRAN	LETH	PERM	TRAN	LETH	UNIFORM	UNIFORM							
A38	3480	3480	3480	4620	4620	4620	3270	2860	1300	980	0	0	4620	3480	2010
7A8	3410	3410	3410	4550	4550	4550	3290	2880	1410	1010	560	0	4550	3410	1980
713	3300	3300	3300	4450	4450	4450	3320	2920	1560	1000	870	280	4450	3300	1920
663	3250	3250	3250	4380	4380	4380	3340	2940	1630	990	1010	580	4380	3250	1900
613	3200	3200	3200	4310	4310	4310	3360	2960	1690	980	1120	770	4310	3200	1870
538	3110	3110	3110	4200	4200	4200	3380	2980	1780	960	1260	970	4200	3110	1850
4A8	3050	3050	3050	4120	4120	4120	3390	3000	1830	940	1370	1070	4120	3050	1850
614	3200	3200	3200	4310	4310	4310	3360	2960	1690	980	1120	770	4310	3200	1870
564	3140	3140	3140	4240	4240	4240	3370	2980	1750	960	1210	920	4240	3140	1850
4A9	3050	3050	3050	4120	4120	4120	3390	3000	1830	940	1370	1070	4120	3050	1850
439	2990	2990	2990	4040	4040	4040	3410	3010	1880	930	1470	1160	4040	2990	1850
3A9	2930	2930	2930	3950	3950	3950	3420	3030	1910	920	1540	1230	3950	2930	1840
314	2840	2840	2840	3830	3830	3830	3430	3040	1940	910	1560	1330	3830	2840	1820
264	2790	2790	2790	3750	3750	3750	3440	3050	1930	900	1560	1350	3750	2790	1800
0	2530	2530	2530	3250	3250	3250	3440	3060	1520	890	1040	1010	3250	2530	1530

* Subtract 100 meters from the 8,000 rad RD to obtain the approximate 18,000 rad RD.

GUIDED MISSILE

100 KT

(11-218)

EFFECTS TABLES

(Distances in meters)

PRECLUDE						SAFETY RADII									
I-PSI OVER- PRES- SURE	MOD DAM FIXED BRG	FOREST BLOWDOWN		WILDLAND FIRES		UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			HOB
		DECID	CONIF	CLASS I	CLASS IV	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	
10880	2190	5950	4340	11130	6790	21790	20140	12500	11000	10070	7460	9580	8450	3380	838
10680	2150	5830	4280	11130	6800	21790	20140	12510	11000	10080	7470	9410	8310	3330	788
10380	2110	5660	4210	11140	6820	21790	20140	12520	11010	10090	7490	9140	8090	3250	713
10190	2080	5540	4160	11150	6830	21800	20150	12520	11020	10090	7500	8960	7930	3190	663
9990	2060	5430	4090	11160	6840	21800	20150	12530	11030	10100	7500	8790	7780	3140	613
9690	2050	5260	3990	11160	6850	21800	20160	12530	11030	10110	7510	8520	7540	3060	538
9490	2050	5130	3930	11170	6860	21810	20160	12540	11040	10110	7520	8350	7370	3010	488
9990	2060	5440	4090	11160	6840	21800	20150	12530	11030	10100	7500	8790	7780	3140	614
9790	2050	5320	4030	11160	6840	21800	20150	12530	11030	10110	7510	8610	7620	3090	564
9490	2050	5130	3930	11170	6860	21810	20160	12540	11040	10110	7520	8340	7380	3010	489
9290	2040	5000	3860	11170	6860	21810	20160	12540	11040	10120	7530	8150	7210	2960	439
9090	2020	4860	3800	11180	6870	21810	20160	12540	11050	10120	7530	7970	7050	2910	389
8790	1980	4670	3690	11180	6870	21810	20160	12550	11050	10120	7540	7690	6800	2820	314
8580	1940	4550	3620	11180	6880	21810	20160	12550	11050	10130	7540	7510	6630	2760	264
7490	1700	4120	3330	11180	6880	21800	20150	12540	11050	10120	7540	6510	5740	2430	0

SEVERE DAMAGE															
BRIDGES		SUPPLY DEPOTS	SURFACE TO AIR MISSILES		MISSILES & ROCKETS		HELICOPTERS RANDOMLY PARKED		RADIOS & FIRE CON EQUIP	OPEN GRID RADAR ANT	TRACKED VEHICLES (no tanks)		RAILROAD BOX & FLAT CARS		HOB
FIXED	FLTG		EXPO	RVTTD	TVLG	ERECT	CGO TRANS	LT OBSN			EXPO	SHLD	LOCO	CARS	
1530	1600	0	2100	720	1630	4470	2930	4770	1620	5840	0	0	0	940	838
1480	1570	20	2130	780	1770	4410	2870	4670	1720	5760	0	0	0	1050	788
1430	1540	270	2170	850	1940	4300	2770	4540	1840	5620	360	360	0	1230	713
1410	1520	370	2190	900	2030	4230	2710	4440	1910	5530	560	560	0	1350	663
1400	1510	460	2200	940	2110	4160	2650	4350	1970	5440	730	620	20	1470	613
1400	1510	570	2200	1000	2210	4060	2560	4210	2060	5290	950	640	210	1640	538
1420	1520	640	2200	1040	2270	3990	2500	4120	2110	5190	1080	640	320	1730	488
1400	1510	450	2200	940	2110	4160	2650	4350	1970	5440	730	620	20	1470	614
1390	1510	540	2200	980	2170	4090	2590	4260	2030	5340	880	640	150	1580	564
1420	1520	640	2200	1040	2270	3990	2500	4130	2100	5190	1070	640	320	1730	489
1440	1540	700	2180	1070	2330	3930	2450	4040	2140	5090	1150	620	430	1800	439
1460	1550	770	2160	1090	2370	3860	2410	3950	2160	4990	1220	610	530	1850	389
1440	1520	960	2120	1080	2400	3750	2350	3810	2180	4830	1280	590	670	1870	314
1420	1480	890	2080	1050	2390	3670	2310	3720	2170	4730	1280	590	740	1840	264
1190	1250	460	1820	850	1900	3240	2110	3280	1820	4160	870	570	320	1130	0

MARK 50 BOMB

3 KT
(7-46)

EFFECTS TABLES

(Distances in meters)

PERSONNEL CASUALTIES

HOB	EXPOSED			IN OPEN FOXHOLES			IN APC'S			IN TANKS			IN EARTH SHELTERS		
	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT
	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH
525	430*	680	1040	0	330	730	350*	600	960	100*	430	790	0	0	220
675	500*	730	1080	130*	420	780	440*	660	1000	250*	500	840	0	0	330
800	590*	790	1120	300*	520	840	530*	730	1050	390*	590	900	0	30	450
950	630*	830	1150	370*	570	870	580*	770	1080	450*	630	930	0	180	500
1000	670*	860	1170	430*	610	900	620*	800	1100	500*	670	950	40*	270	550
1225	710*	890	1190	490*	650	930	660*	830	1120	550*	710	980	190*	340	590
175	720*	900	1200	510*	670	940	680*	850	1130	570*	730	990	240*	380	610
195	590*	800	1130	310*	530	840	540*	740	1050	390*	600	900	0	60	450
245	640*	830	1150	380*	570	880	580*	770	1080	450*	640	930	0	190	510
270	690*	870	1180	450*	630	910	640*	820	1110	520*	690	970	120*	300	570
320	710*	890	1200	490*	650	930	660*	840	1120	550*	710	980	190*	350	600
180	720*	900	1200	510*	670	940	680*	850	1130	570*	730	990	230*	370	610
95	720*	900	1190	520*	670	930	680*	840	1120	570*	730	990	270*	400	620
45	700*	870	1160	500*	650	910	660*	820	1090	560*	710	960	270*	390	600
0	630*	790	1070	440*	580	930	590*	740	1010	490*	640	880	220*	330	530

PERSONNEL CASUALTIES

MODERATE DAMAGE

SEVERE DAMAGE

HOB	IN MULTI-STORY BRICK APTS			IN WOOD FRAME BUILDINGS			2nd DEGREE BURNS		WHEELED VEHICLES		TANKS		TOWED ARTY		MULTI STORY WOOD FRAME BLDG		FACTORIES	
							SUMMER	WINTER	EXPO	SHLD	TANKS	TOWED	ARTY	WOOD	STORY	FACT-		
	IMMED	IMMED	LAT	IMMED	IMMED	LAT	UNIFORM	UNIFORM	EXPO	SHLD	TANKS	TOWED	ARTY	FRAME	BRICK	ORIES		
	PERM	TRAN	LETH	PERM	TRAN	LETH	UNIFORM	UNIFORM	EXPO	SHLD	TANKS	TOWED	ARTY	BLDG	APT			
525	900	900	980	1490	1490	1490	530	360	0	0	0	0	0	1490	900	0		
675	1100	1100	1100	1480	1480	1480	590	440	0	0	0	0	0	1480	1100	0		
800	1120	1120	1120	1420	1420	1420	670	540	0	0	0	0	0	1420	1120	0		
950	1080	1080	1100	1370	1370	1370	710	580	0	0	0	0	0	1370	1080	0		
1000	1010	1010	1120	1300	1300	1300	740	620	170	140	0	0	0	1300	1010	410		
1225	920	920	1140	1230	1230	1230	780	670	320	280	160	0	0	1230	920	350		
175	870	870	1150	1170	1170	1170	800	690	370	270	250	180	0	1170	870	330		
195	1120	1120	1120	1420	1420	1420	670	540	0	0	0	0	0	1420	1120	0		
245	1070	1070	1100	1360	1360	1360	710	590	0	0	0	0	0	1360	1070	0		
270	980	980	1130	1270	1270	1270	760	640	250	250	0	0	0	1270	980	380		
320	920	920	1140	1220	1220	1220	780	670	330	280	170	40	0	1220	920	340		
180	870	870	1150	1180	1180	1180	800	690	370	270	240	170	0	1180	870	330		
95	790	860	1140	1050	1050	1150	820	710	410	250	330	280	0	1050	790	360		
45	740	830	1110	990	990	1120	760	660	380	250	300	280	0	990	740	320		
0	710	760	1020	890	890	1030	680	590	320	250	210	200	0	890	710	290		

* Subtract 100 meters from the 8,000 rad RD to obtain the approximate 18,000 rad RD.

MARK 50 BOMB

3 KT

(7-46)

EFFECTS TABLES

(Distances in meters)

PRECLUDE						SAFETY RADII									
I-PSI OVER- PRESSURE	MOD DAM FIXED BRG	FOREST BLOWDOWN		WILDLAND FIRES		UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			HOB
		DECID	CONIF	CLASS I	CLASS IV	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	** EMER	
3000	0	1630	0	2670	1570	4690	4290	2660	2690	2450	1830	3370	2920	1090	525
3700	0	1620	0	2680	1600	4600	4300	2680	2700	2470	1850	3290	2860	1120	475
3500	300	1690	1170	2700	1630	4610	4310	2700	2720	2490	1880	3140	2750	1170	400
3440	500	1630	1140	2720	1650	4620	4320	2710	2730	2500	1900	3020	2650	1190	350
3280	550	1460	1060	2730	1660	4620	4320	2720	2740	2510	1910	2880	2530	1220	300
3010	500	1370	910	2740	1680	4630	4330	2730	2760	2530	1930	2650	2340	1240	225
2830	490	1290	850	2740	1690	4630	4330	2740	2760	2530	1930	2680	2200	1240	175
3580	300	1680	1170	2710	1630	4610	4310	2700	2720	2490	1880	3130	2740	1170	395
3430	500	1630	1130	2720	1650	4620	4320	2710	2740	2500	1900	3000	2640	1200	345
3170	530	1420	930	2730	1670	4630	4330	2730	2750	2520	1920	2790	2460	1230	270
2900	500	1360	900	2740	1680	4630	4330	2730	2760	2530	1930	2630	2330	1240	220
2840	490	1300	850	2740	1690	4630	4330	2740	2760	2530	1930	2500	2210	1240	180
2530	490	1140	790	2750	1700	4640	4340	2750	2770	2540	1940	2210	1950	1230	95
2330	450	1040	760	2540	1560	4750	4060	2540	2550	2340	1780	2040	1800	1200	45
2160	410	1020	710	2320	1400	4040	3770	2320	2340	2140	1610	1880	1650	1110	0

SEVERE DAMAGE															
BRIDGES		SUPPLY DEPOTS	SURFACE TO AIR MISSILES		MISSILES & ROCKETS		HELICOPTERS RANDOMLY PARKED		RADIOS & FIRE CON EQUIP	OPEN GRID RADAR ANT	TRACKED VEHICLES (no tanks)		RAILROAD BOX & FLAT CARS		HOB
FIXED	FLTG		EXPO	RVTTD	TVLG	ERECT	CGO TRANS	LT OBSN			EXPO	SHLD	LOCO	CARS	
0	0	0	100	0	0	620	500	1720	0	1360	0	0	0	0	525
0	0	0	210	0	0	1100	980	1670	0	1490	0	0	0	0	475
0	0	0	330	20	0	1140	940	1560	0	1480	0	0	0	0	400
0	0	0	330	90	0	1110	900	1480	180	1420	0	0	0	30	350
0	0	0	430	150	180	1030	960	1400	280	1360	0	0	0	130	300
240	230	30	470	230	340	960	770	1270	390	1260	40	40	0	240	225
230	250	90	480	280	390	910	720	1190	440	1190	170	170	0	330	175
0	0	0	330	20	0	1140	940	1550	0	1470	0	0	0	0	395
0	0	0	390	100	0	1100	900	1470	190	1420	0	0	0	50	345
0	0	0	450	190	270	1000	930	1350	330	1320	0	0	0	170	270
240	240	30	470	240	350	950	770	1260	390	1260	60	60	0	250	220
230	250	90	480	270	390	910	720	1200	430	1200	160	160	0	320	180
250	280	170	450	300	440	930	650	1060	470	1070	260	160	130	400	95
200	240	180	410	260	410	770	610	980	440	1000	250	160	150	300	45
160	210	80	390	240	340	710	580	910	390	920	170	160	90	230	"

** Nuclear radiation effects are significant. If troops have history of previous exposure, consult figure 15-8 for modification of risk radii.

MARK 50 BOMB

10 KT

(9-80)

EFFECTS TABLES

(Distances in meters)

PERSONNEL CASUALTIES

HOB	EXPOSED			IN OPEN FOXHOLES			IN APC'S			IN TANKS			IN EARTH SHELTERS		
	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT	IMMED	IMMED	LAT
	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH	PERM	TRAN	LETH
577	640*	900	1310	230*	540	950	550*	910	1200	340*	620	1010	0	0	440
527	700*	950	1340	340*	610	1000	620*	970	1240	440*	690	1050	0	0	520
452	780*	1010	1390	460*	700	1060	710*	930	1290	540*	770	1110	0	230	610
402	820*	1050	1410	520*	740	1090	750*	970	1320	600*	810	1140	40*	320	660
352	860*	1080	1440	570*	780	1120	790*	1000	1340	640*	850	1170	170*	390	710
277	900*	1110	1460	630*	830	1150	840*	1040	1370	700*	890	1200	280*	460	760
227	920*	1130	1480	660*	850	1170	860*	1050	1380	720*	910	1220	320*	500	780
417	810*	1040	1410	510*	730	1080	740*	960	1310	580*	800	1130	0	300	650
367	850*	1070	1430	560*	770	1110	780*	990	1330	630*	840	1160	140*	370	690
292	890*	1110	1460	620*	820	1150	830*	1030	1360	690*	880	1190	260*	450	750
242	910*	1120	1470	650*	840	1160	850*	1050	1380	710*	900	1210	310*	490	770
192	930*	1130	1480	670*	860	1170	870*	1060	1390	730*	920	1220	350*	510	790
177	930*	1140	1480	680*	860	1180	870*	1060	1390	740*	920	1220	360*	520	790
67	910*	1110	1450	670*	850	1150	850*	1040	1360	730*	900	1200	370*	520	780
0	810*	1000	1320	580*	750	1040	760*	940	1240	640*	810	1090	300*	440	690

PERSONNEL CASUALTIES

MODERATE DAMAGE

SEVERE DAMAGE

HOB	IN MULTI-STORY BRICK APTS			IN WOOD FRAME BUILDINGS			2nd DEGREE BURNS		WHEELED VEHICLES		TANKS		MULTI STORY FACTORIES		
	IMMED	IMMED	LAT	IMMED	IMMED	LAT	SUMMER	WINTER	EXPO	SHLD	TOWED	ARTY	WOOD	BRICK	FACT-
	PERM	TRAN	LETH	PERM	TRAN	LETH	UNIFORM	UNIFORM					FRAME	APT	ORIES
577	1780	1780	1780	2290	2290	2290	1190	1000	0	0	0	0	2290	1780	0
527	1730	1730	1730	2240	2240	2240	1230	1040	0	0	0	0	2240	1730	790
452	1640	1640	1640	2130	2130	2130	1280	1100	260	190	0	0	2130	1640	750
402	1570	1570	1570	2060	2060	2060	1310	1130	430	410	0	0	2060	1570	710
352	1510	1510	1510	2010	2010	2010	1340	1160	530	430	220	0	2010	1510	660
277	1410	1410	1410	1920	1920	1920	1370	1200	620	410	400	270	1920	1410	620
227	1350	1350	1410	1850	1850	1850	1380	1210	670	400	490	360	1850	1350	640
417	1590	1590	1590	2080	2080	2080	1300	1120	390	360	0	0	2080	1590	720
367	1530	1530	1530	2020	2020	2020	1330	1150	500	430	160	0	2020	1530	680
292	1430	1430	1430	1940	1940	1940	1360	1190	610	420	370	220	1940	1430	630
242	1370	1370	1410	1870	1870	1870	1380	1210	650	400	460	340	1870	1370	630
192	1310	1310	1420	1790	1790	1790	1390	1220	690	390	540	420	1790	1310	660
177	1300	1300	1420	1760	1760	1760	1400	1230	700	390	550	430	1760	1300	660
67	1190	1190	1390	1570	1570	1570	1330	1170	660	380	510	480	1570	1190	590
0	1120	1120	1270	1430	1430	1430	1250	1100	540	380	350	340	1430	1120	520

* Subtract 100 meters from the 8,000 rad RD to obtain the approximate 18,000 rad RD.

MARK 50 BOMB

10 KT

(9-80)

EFFECTS TABLES

(Distances in meters)

PRECLUDE						SAFETY RADII									
1-PSI OVER- PRES- SURE	MOD DAM FIXED BRG	FOREST BLOWDOWN		WILDLAND FIRES		UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			HOB
		DECID	CONIF	CLASS I	CLASS IV	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	
5670	1170	2030	2020	4450	2900	7030	7270	4590	4450	4130	3250	4060	4340	1730	577
5510	1140	2710	1970	4460	2920	7040	7280	4600	4460	4140	3270	4030	4230	1670	527
5250	980	2520	1860	4470	2940	7050	7290	4620	4480	4160	3290	4010	4050	1570	452
5060	940	2420	1760	4480	2960	7050	7300	4630	4490	4170	3300	4050	3920	1520	402
4870	900	2320	1670	4490	2970	7060	7300	4630	4490	4180	3310	4080	3780	1480	352
4570	870	2190	1560	4500	2980	7060	7310	4640	4500	4190	3330	4010	3550	1510	277
4370	880	2090	1490	4510	2990	7070	7310	4650	4510	4190	3330	3830	3390	1520	227
5120	550	2450	1790	4480	2950	7050	7300	4620	4480	4170	3300	4000	3960	1540	417
4920	510	2350	1700	4490	2960	7060	7300	4630	4490	4170	3310	4030	3820	1490	367
4630	470	2210	1580	4500	2980	7060	7310	4640	4500	4190	3320	4070	3600	1500	292
4430	480	2120	1510	4510	2990	7070	7310	4650	4510	4190	3330	3990	3440	1520	242
4230	480	2030	1430	4510	2990	7070	7310	4650	4510	4200	3340	3700	3270	1520	192
4170	480	2010	1410	4510	3000	7070	7310	4650	4510	4200	3340	3650	3220	1520	177
3720	790	1780	1300	4310	2840	7550	6950	4450	4310	4010	3170	3240	2850	1490	67
3440	730	1670	1190	4130	2700	7180	6630	4260	4130	3840	3020	2990	2630	1570	0

SEVERE DAMAGE																
BRIDGES		SUPPLY DEPOTS	SURFACE TO AIR MISSILES		MISSILES & ROCKETS		HELICOPTERS RANDOMLY PARKED		RADIOS & FIRE CON EQUIP	OPEN GRID RADAR ANT	TRACKED VEHICLES (no tanks)		RAILROAD BOX & FLAT CARS		HOB	
FIXED	FLTG		EXPO	RVTTD	TVLG	ERECT	CGO TRANS	LT OBSN			EXPO	SHLD	LOCO	CARS		
0	0	0	590	40	0	1060	1490	2470	0	2540	0	0	0	0	577	
0	0	0	650	110	0	1020	1440	2380	280	2470	0	0	0	20	527	
0	0	0	730	220	310	1790	1370	2250	480	2360	0	0	0	210	452	
440	460	0	770	280	490	1730	1310	2160	560	2290	0	0	0	290	402	
440	450	0	790	340	600	1680	1250	2070	640	2210	0	0	0	380	352	
400	450	130	820	110	700	1590	1160	1930	730	2090	250	250	0	540	277	
390	470	190	810	440	750	1630	1100	1840	780	2010	170	260	70	630	227	
440	430	0	760	260	450	1750	1330	2180	540	2310	0	0	0	270	417	
440	460	0	790	320	570	1700	1270	2090	620	2230	0	0	0	350	367	
410	450	110	810	390	680	1600	1180	1960	720	2120	210	210	0	510	292	
390	470	180	820	430	740	1650	1120	1870	770	2030	140	260	40	600	242	
410	490	230	800	470	780	1690	1070	1780	800	1940	410	250	130	670	192	
420	500	250	800	470	790	1670	1050	1750	800	1920	430	250	160	680	177	
360	420	300	710	390	740	1620	970	1660	760	1720	420	230	250	520	67	
300	380	120	670	360	620	1630	920	1460	670	1600	290	230	150	390	0	

** Nuclear radiation effects are significant. If troops have history of previous exposure, consult figure 15-8 for modification of risk radii.

MARK 50 BOMB

100 KT

(11-218)

EFFECTS TABLES

(Distances in meters)

PERSONNEL CASUALTIES

HOB	EXPOSED			IN OPEN FOXHOLES			IN APC'S			IN TANKS			IN EARTH SHELTERS		
	IMMED			IMMED			IMMED			IMMED			IMMED		
	PERM	TRAN	LAT LETH	PERM	TRAN	LAT LETH	PERM	TRAN	LAT LETH	PERM	TRAN	LAT LETH	PERM	TRAN	LAT LETH
838	1400	1400	1600	330*	690	1170	690*	990	1440	420*	750	1190	0	0	550
788	1290	1290	1640	440*	770	1220	760*	1050	1490	520*	820	1240	0	40	640
713	1150	1260	1700	570*	860	1290	860*	1130	1550	640*	910	1310	80	270	700
663	1080	1300	1730	640*	920	1330	920*	1180	1580	710*	960	1350	200	370	810
613	1070*	1340	1760	710*	970	1370	970*	1220	1620	770*	1010	1390	500	500	860
538	1130*	1390	1800	790*	1030	1420	1030*	1270	1660	840*	1070	1440	500	550	930
488	1160*	1420	1830	830*	1070	1450	1080	1300	1680	880*	1110	1470	490	610	970
614	1070*	1340	1760	710*	970	1370	960*	1220	1620	770*	1010	1390	490	490	860
564	1110*	1370	1790	760*	1010	1400	1010*	1250	1640	820*	1050	1420	510	520	910
489	1160*	1420	1830	830*	1070	1450	1070	1300	1680	880*	1110	1460	490	610	970
439	1190*	1440	1850	870*	1100	1470	1150	1330	1710	920*	1140	1490	470	650	1000
389	1320	1460	1870	900*	130	1500	1220	1350	1730	950*	1170	1510	480*	690	1030
314	1420	1490	1890	940*	1460	1520	1280	1380	1750	990*	1200	1540	540*	740	1070
264	1270*	1510	1900	960*	1480	1540	1280	1400	1760	1010*	1220	1550	570*	770	1090
0	1270	1350	1720	850*	1050	1380	1050*	1260	1600	900*	1090	1410	500*	670	970

PERSONNEL CASUALTIES

MODERATE DAMAGE

SEVERE DAMAGE

HOB	IN MULTI-STORY BRICK APTS			IN WOOD FRAME BUILDINGS			2nd DEGREE BURNS		WHEELED VEHICLES		TOWED ARTY		MULTI STORY BRICK FACTORIES		
	IMMED			IMMED			SUMMER		EXPO		TANKS		WOOD FRAME BLDG		
	PERM	TRAN	LAT LETH	PERM	TRAN	LAT LETH	UNIFORM	UNIFORM	SHLD	SHLD	PERM	TRAN	BLDG	APT	ORIES
838	3480	3480	3480	4620	4620	4620	3270	2860	1300	980	0	0	4620	3480	2010
788	3410	3410	3410	4550	4550	4550	3290	2880	1410	1010	560	0	4550	3410	1980
713	3300	3300	3300	4450	4450	4450	3320	2920	1560	1000	870	280	4450	3300	1920
663	3250	3250	3250	4380	4380	4380	3340	2940	1630	990	1010	580	4380	3250	1900
613	3200	3200	3200	4310	4310	4310	3360	2960	1690	980	1120	770	4310	3200	1870
538	3110	3110	3110	4200	4200	4200	3380	2980	1780	960	1260	970	4200	3110	1850
488	3050	3050	3050	4120	4120	4120	3390	3000	1830	940	1370	1070	4120	3050	1850
614	3200	3200	3200	4310	4310	4310	3360	2960	1690	980	1120	770	4310	3200	1870
564	3140	3140	3140	4240	4240	4240	3370	2980	1750	960	1210	920	4240	3140	1850
489	3050	3050	3050	4120	4120	4120	3390	3000	1830	940	1370	1070	4120	3050	1850
439	2990	2990	2990	4040	4040	4040	3410	3010	1880	930	1470	1160	4040	2990	1850
389	2930	2930	2930	3950	3950	3950	3420	3030	1910	920	1540	1230	3950	2930	1840
314	2840	2840	2840	3830	3830	3830	3430	3040	1940	910	1560	1330	3830	2840	1820
264	2790	2790	2790	3750	3750	3750	3440	3050	1930	900	1560	1350	3750	2790	1800
0	2530	2530	2530	3250	3250	3250	3440	3060	1520	890	1040	1010	3250	2530	1530

* Subtract 100 meters from the 8,000 rad RD to obtain the approximate 18,000 rad RD.

MARK 50 BOMB

100 KT

(11-218)

EFFECTS TABLES

(Distances in meters)

PRECLUDE						SAFETY RADII									
1-PSI OVER- PRES- SURE	MOD DAM FIXED BRG	FOREST BLOWDOWN		WILDLAND FIRES		UNWARNED EXPOSED			WARNED EXPOSED			WARNED PROTECTED			HOB
		DECID	CONIF	CLASS I	CLASS IV	NEG	MOD	EMER	NEG	MOD	EMER	NEG	MOD	EMER	
10880	2190	5950	4340	11*30	6790	21790	20140	12500	11000	10070	7460	9580	8450	3380	838
10680	2150	5830	4280	11130	6800	21790	20140	12510	11000	10080	7470	9410	8310	3330	788
10380	2110	5660	4210	11*40	6820	21790	20140	12520	11010	10090	7490	9140	8090	3250	713
10190	2080	5540	4160	11150	6830	21800	20150	12520	11020	10090	7500	8980	7930	3190	663
9990	2060	5430	4090	11*60	6840	21800	20150	12530	11030	10100	7500	8790	7780	3140	613
9690	2050	5260	3990	11 60	6850	21800	20160	12530	11030	10110	7510	8520	7540	3060	538
9490	2050	5130	3930	11*70	6860	21810	20160	12540	11040	10110	7520	8330	7370	3010	488
9990	2060	5440	4090	11*60	6840	21800	20150	12530	11030	10100	7500	8790	7780	3140	614
9790	2050	5320	4030	11 60	6840	21800	20150	12530	11030	10110	7510	8610	7620	3090	564
9490	2050	5130	3930	11*70	6860	21810	20160	12540	11040	10110	7520	8340	7380	3010	489
9290	2040	5000	3860	11*70	6860	21810	20160	12540	11040	10120	7530	8150	7210	2960	439
9090	2020	4860	3800	11180	6870	21810	20160	12540	11050	10120	7530	7970	7050	2910	389
8790	1980	4670	3690	11*80	6870	21810	20160	12550	11050	10120	7540	7690	6800	2820	314
8580	1940	4550	3620	11180	6880	21810	20160	12550	11050	10130	7540	7510	6630	2760	264
7490	1780	4120	3330	11180	6880	21800	20150	12540	11050	10120	7540	6510	5740	2430	0

SEVERE DAMAGE															
BRIDGES		SUPPLY DEPOTS	SURFACE TO AIR MISSILES		MISSILES & ROCKETS		HELICOPTERS RANDOMLY PARKED		RADIOS & FIRE CON EQUIP	OPEN GRID RADAR ANT	TRACKED VEHICLES (no tanks)		RAILROAD BOX & FLAT CARS		HOB
FIXED	FLTG		EXPO	RVTTD	TVLG	ERECT	CGO TRANS	LT OBSN			EXPO	SHLD	LOCO	CARS	
1530	1600	0	2100	720	1630	4470	2930	4770	1620	5840	0	320	0	940	838
1480	1570	20	2130	780	1770	4410	2870	4670	1720	5760	0	340	0	1050	788
1430	1540	270	2170	850	1940	4300	2770	4540	1840	5620	360	360	0	1230	713
1410	1520	370	2190	900	2030	4230	2710	4440	1910	5530	560	560	0	1350	663
1400	1510	460	2200	940	2110	4160	2650	4350	1970	5440	730	620	20	1470	613
1400	1510	570	2200	1000	2210	4060	2560	4210	2060	5290	950	640	210	1640	538
1420	1520	640	2200	1040	2270	3990	2500	4120	2110	5190	1080	640	320	1730	488
1400	1510	450	2200	940	2110	4160	2650	4350	1970	5440	730	620	20	1470	614
1390	1510	540	2200	980	2170	4090	2590	4260	2030	5340	880	640	150	1580	564
1420	1520	640	2200	1040	2270	3990	2500	4130	2100	5190	1070	640	320	1730	489
1440	1540	700	2180	1070	2330	3930	2450	4040	2140	5090	1150	620	430	1800	439
1460	1550	770	2160	1090	2370	3860	2410	3950	2160	4990	1220	610	530	1850	389
1440	1520	860	2120	1080	2400	3750	2350	3810	2180	4830	1280	590	570	1870	314
1420	1480	890	2080	1050	2390	3670	2310	3720	2170	4730	1280	590	740	1840	264
1190	1250	460	1820	850	1900	3240	2110	3280	1820	4160	870	570	320	1130	0

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CHAPTER 14
COLLATERAL DAMAGE AVOIDANCE TABLES

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MARK 50 Bomb	100.0	KT	14-8

SHORT RANGE CANNON

SHORT RANGE CANNON

.2 KT
(3-10)

COLLATERAL DAMAGE AVOIDANCE TABLES

(Distances in meters)

.2 KT
(3-10)

PERSONNEL INJURY [5% incidence]				MODERATE DAMAGE TO FACILITIES [5% incidence]				THERMAL IGNITION [threshold level]				
HOB	URBAN	RURAL	IN OPEN	SINGLE STORY FRAME BUILDING	SINGLE STORY MASONRY BUILDING	LT STEEL FRAME INDUST BLDG	FIXED BRIDGES	RAIL ROAD EQUIP	WOOD SHINGLES	DRAPES	NEWSPAPERS & DEBRIS	HOB
600	270	480	510	410	0	0	0	0	0	140	270	600
570	310	510	540	440	0	0	0	0	0	210	310	570
540	350	530	560	470	0	0	0	0	0	260	350	540
510	380	550	580	500	90	0	0	0	0	300	380	510
480	410	570	600	530	170	0	0	0	0	340	410	480
450	430	590	620	550	220	0	0	0	0	360	430	450
420	460	610	630	580	260	0	0	0	0	390	460	420
390	480	620	650	600	290	0	0	0	60	410	480	390
360	490	640	660	630	320	0	0	0	130	430	490	360
330	510	650	670	720	350	60	0	0	180	450	510	330
300	520	660	680	760	410	120	0	0	210	470	520	300
270	540	670	690	900	440	160	50	0	240	490	540	270
240	550	680	700	910	470	200	100	0	260	490	550	240
210	550	680	710	890	570	280	140	0	280	500	560	210
180	560	690	710	860	580	350	280	0	290	510	560	180
150	560	690	710	820	560	340	270	160	310	520	570	150
120	560	690	710	770	530	320	250	200	320	530	580	120
90*	560	680	710	710	490	290	230	200	320	530	580	90*
60	550	670	700	640	450	270	210	200	330	530	580	60
30	530	650	680	570	400	240	190	190	330	540	590	30
1	490	610	630	500	350	220	170	160	250	400	430	1

1 KT
(5-24)

COLLATERAL DAMAGE AVOIDANCE TABLES

(Distances in meters)

1 KT
(5-24)

PERSONNEL INJURY [5% incidence]				MODERATE DAMAGE TO FACILITIES [5% incidence]				THERMAL IGNITION [threshold level]				
HOB	URBAN	RURAL	IN OPEN	SINGLE STORY FRAME BUILDING	SINGLE STORY MASONRY BUILDING	LT STEEL FRAME INDUST BLDG	FIXED BRIDGES	RAIL ROAD EQUIP	WOOD SHINGLES	DRAPES	NEWSPAPERS & DEBRIS	HOB
600	650	850	1150	1480	700	110	0	0	500	900	990	600
570	680	870	1170	1520	730	210	0	0	530	920	1000	570
540	700	870	1180	1680	810	270	0	0	560	940	1020	540
510	720	900	1200	1910	840	320	110	0	590	960	1030	510
480	740	920	1210	1930	870	360	190	0	610	970	1050	480
450	760	930	1220	1940	900	400	240	0	630	980	1060	450
420	780	950	1230	1930	940	460	290	0	650	1000	1070	420
390	800	1140	1240	1910	1150	530	330	0	670	1010	1080	390
360	810	1160	1250	1880	1160	720	390	0	690	1020	1090	360
330	820	1170	1260	1840	1170	740	500	0	700	1030	1100	330
300	860	1160	1260	1790	1170	730	610	0	710	1040	1110	300
270	840	1140	1270	1740	1160	710	610	280	720	1050	1120	270
240	840	1100	1280	1680	1110	690	580	420	730	1050	1130	240
210	850	1060	1280	1610	1070	670	550	450	740	1060	1130	210
180	850	1020	1280	1540	1030	640	530	450	750	1070	1140	180
150	850	1010	1290	1460	980	610	510	460	760	1070	1140	150
120	850	1010	1290	1380	940	590	490	460	760	1070	1140	120
90*	850	1000	1290	1300	880	560	470	450	770	1080	1150	90*
60	830	920	1300	1220	830	530	440	430	770	1080	1150	60
30	810	960	1150	1140	770	490	420	410	680	960	1020	30
1	760	910	1000	1060	720	460	390	370	580	820	880	1

* Typical HOB

NOTE: PERSONNEL INJURY NORMALLY GOVERNS COLLATERAL DAMAGE CONSTRAINTS.

MEDIUM RANGE CANNON

MEDIUM RANGE CANNON

2 KT
(6-38)

COLLATERAL DAMAGE AVOIDANCE TABLES (Distances in meters)

2 KT
(6-38)

PERSONNEL INJURY [5% incidence]				MODERATE DAMAGE TO FACILITIES [5% incidence]				THERMAL IGNITION [threshold level]				
HOB	URBAN	RURAL	IN OPEN	SINGLE STORY FRAME BUILDING	SINGLE STORY MASONRY BUILDING	LT STEEL FRAME INDUST BLDG	FIXED BRIDGES	RAIL ROAD EQUIP	WOOD SHINGLES	DRAPES	NEWSPAPERS & DEBRIS	HOB
600	920	1320	2040	2870	1320	550	320	0	1010	1480	1570	600
570	950	1360	2050	2890	1360	600	380	0	1040	1500	1590	570
540	1160	1410	2070	2880	1410	650	430	0	1060	1510	1610	540
510	1200	1740	2080	2870	1740	760	480	0	1080	1530	1620	510
480	1220	1770	2090	2840	1770	810	530	0	1100	1540	1630	480
450	1230	1780	2100	2800	1780	1110	830	0	1120	1560	1650	450
420	1240	1800	2110	2760	1790	1120	880	0	1130	1570	1660	420
390	1310	1800	2110	2710	1800	1120	940	0	1150	1580	1670	390
360	1290	1780	2120	2650	1780	1100	940	180	1160	1590	1680	360
330	1280	1730	2130	2580	1730	1070	920	540	1180	1600	1690	330
300	1260	1690	2140	2510	1690	1050	880	660	1190	1610	1690	300
270	1230	1640	2140	2430	1640	1020	850	690	1200	1610	1700	270
240	1190	1500	2150	2340	1590	990	830	700	1210	1620	1710	240
210	1150	1540	2150	2250	1540	950	800	710	1210	1630	1710	210
180	1140	1480	2160	2160	1480	920	770	710	1220	1630	1720	180
150*	1140	1420	2160	2060	1420	890	740	710	1230	1640	1720	150*
120	1130	1360	2160	1970	1360	850	720	700	1230	1640	1730	120
90	1120	1320	2160	1870	1290	810	690	690	1230	1640	1730	90
60	1110	1310	2090	1770	1220	770	660	660	1180	1580	1660	60
30	1080	1270	1930	1670	1150	730	620	630	1080	1450	1530	30
1	1020	1210	1780	1580	1080	690	590	570	980	1320	1400	1

8 KT
(9-74)

COLLATERAL DAMAGE AVOIDANCE TABLES (Distances in meters)

8 KT
(9-74)

PERSONNEL INJURY [5% incidence]				MODERATE DAMAGE TO FACILITIES [5% incidence]				THERMAL IGNITION [threshold level]				
HOB	URBAN	RURAL	IN OPEN	SINGLE STORY FRAME BUILDING	SINGLE STORY MASONRY BUILDING	LT STEEL FRAME INDUST BLDG	FIXED BRIDGES	RAIL ROAD EQUIP	WOOD SHINGLES	DRAPES	NEWSPAPERS & DEBRIS	HOB
600	420	3370	4310	4710	3330	2090	1820	0	2310	2790	2880	600
570	400	3330	4320	4640	3300	2060	1820	380	2320	2800	2890	570
540	390	3280	4320	4570	3250	2030	1780	860	2340	2810	2900	540
510	2370	3220	4330	4500	3190	2000	1740	1180	2350	2820	2910	510
480	2340	3170	4340	4420	3140	1970	1710	1310	2360	2840	2920	480
450	2310	3110	4340	4330	3080	1930	1670	1370	2370	2840	2930	450
420	2270	3060	4350	4250	3030	1900	1640	1400	2380	2850	2940	420
390	2220	3000	4360	4150	2970	1860	1610	1420	2390	2860	2950	390
360	2180	2940	4360	4060	2910	1820	1580	1430	2400	2870	2950	360
330	2130	2870	4370	3960	2850	1780	1540	1430	2410	2880	2960	330
300	2080	2810	4370	3850	2780	1740	1510	1440	2420	2880	2970	300
270	2030	2740	4370	3750	2710	1700	1470	1440	2420	2890	2970	270
240	1980	2670	4380	3640	2640	1660	1440	1430	2430	2890	2980	240
210	1930	2590	4380	3530	2570	1620	1410	1430	2440	2900	2980	210
180*	1870	2510	4380	3420	2490	1570	1370	1410	2440	2900	2990	180*
150	1810	2430	4380	3310	2410	1530	1330	1390	2440	2910	2990	150
120	1750	2350	4350	3200	2330	1480	1290	1360	2420	2880	2960	120
90	1690	2270	4260	3090	2250	1430	1250	1330	2360	2810	2890	90
60	1630	2180	4170	2980	2160	1380	1200	1290	2300	2740	2820	60
30	1570	2100	4070	2870	2080	1330	1160	1240	2230	2660	2740	30
1	1510	2020	3980	2760	2000	1280	1120	1150	2170	2590	2670	1

* Typical HOB

NOTE: PERSONNEL INJURY NORMALLY GOVERNS COLLATERAL DAMAGE CONSTRAINTS.

FREE FLIGHT ROCKET

FREE FLIGHT ROCKET

5 KT
(8-59)

COLLATERAL DAMAGE AVOIDANCE TABLES (Distances in meters)

5 KT
(8-59)

PERSONNEL INJURY [5% incidence]				MODERATE DAMAGE TO FACILITIES [5% incidence]				THERMAL IGNITION [threshold level]				
HOB	URBAN	RURAL	IN OPEN	SINGLE STORY FRAME BUILDING	SINGLE STORY MASONRY BUILDING	LT STEEL FRAME INDUST BLDG	FIXED BRIDGES	RAIL ROAD EQUIP	WOOD SHINGLES	DRAPES	NEWSPAPERS & DEBRIS	HOB
600	1850	2730	3440	4080	3710	1700	1270	0	1810	2290	2380	600
570	1860	2740	3450	4030	3720	1710	1310	0	1820	2300	2390	570
540	1970	2750	3460	3980	3730	1710	1450	0	1840	2320	2410	540
510	1970	2730	3470	3920	3710	1690	1460	0	1850	2330	2420	510
480	1950	2600	3470	3850	3680	1660	1450	400	1870	2340	2430	480
450	1930	2640	3480	3780	3620	1630	1420	830	1880	2350	2440	450
420	1910	2500	3490	3700	3570	1600	1380	1000	1890	2360	2450	420
390	1880	2540	3500	3620	3520	1570	1350	1070	1910	2370	2460	390
360	1840	2400	3500	3530	3470	1540	1320	1100	1920	2380	2470	360
330	1800	2430	3510	3440	3410	1500	1290	1110	1920	2390	2470	330
300	1760	2370	3510	3350	3360	1460	1260	1120	1930	2390	2480	300
270	1710	2310	3520	3250	3290	1430	1220	1130	1940	2400	2490	270
240	1670	2260	3520	3150	3230	1390	1190	1130	1950	2400	2490	240
210	1620	2140	3520	3040	3160	1350	1160	1130	1950	2410	2500	210
180*	1570	2110	3530	2940	3090	1310	1120	1120	1960	2410	2500	180*
150	1510	2030	3530	2830	3020	1270	1090	1110	1960	2420	2500	150
120	1460	1950	3530	2720	2940	1220	1050	1090	1970	2420	2510	120
90	1400	1880	3460	2620	2860	1180	1020	1060	1920	2370	2450	90
60	1380	1800	3340	2510	2780	1130	980	1030	1840	2280	2360	60
30	1350	1720	3230	2400	2710	1080	930	980	1760	2180	2260	30
0	1260	1640	3110	2290	2630	1030	900	900	1680	2090	2170	0

20 KT
(9-105)

COLLATERAL DAMAGE AVOIDANCE TABLES (Distances in meters)

20 KT
(9-105)

PERSONNEL INJURY [5% incidence]				MODERATE DAMAGE TO FACILITIES [5% incidence]				THERMAL IGNITION [threshold level]				
HOB	URBAN	RURAL	IN OPEN	SINGLE STORY FRAME BUILDING	SINGLE STORY MASONRY BUILDING	LT STEEL FRAME INDUST BLDG	FIXED BRIDGES	RAIL ROAD EQUIP	WOOD SHINGLES	DRAPES	NEWSPAPERS & DEBRIS	HOB
600	2920	3940	5710	5450	3900	2510	2120	1860	3040	3300	3440	600
570	2880	3890	5720	5370	3850	2470	2090	1880	3040	3300	3450	570
540	2840	3830	5720	5280	3790	2440	2060	1900	3050	3400	3460	540
510	2800	3770	5730	5190	3740	2400	2030	1910	3060	3410	3470	510
480	2750	3700	5730	5100	3680	2360	2000	1920	3070	3420	3470	480
450	2710	3640	5740	5010	3620	2320	1970	1920	3080	3430	3480	450
420	2660	3590	5740	4910	3560	2290	1930	1930	3090	3430	3490	420
390	2620	3530	5750	4810	3500	2250	1900	1930	3090	3440	3490	390
360	2570	3480	5750	4710	3430	2210	1870	1930	3100	3440	3500	360
330	2520	3420	5750	4610	3360	2170	1830	1930	3100	3450	3500	330
300	2470	3370	5760	4510	3290	2130	1800	1920	3110	3450	3510	300
270	2420	3320	5760	4410	3220	2080	1770	1910	3110	3460	3510	270
240	2370	3140	5760	4310	3150	2040	1730	1890	3120	3460	3510	240
210*	2310	3100	5760	4200	3070	1990	1700	1870	3120	3470	3520	210*
180	2250	3030	5750	4100	3000	1950	1660	1840	3110	3460	3510	180
150	2200	2950	5690	4000	2920	1900	1620	1810	3080	3430	3480	150
120	2140	2870	5630	3890	2840	1850	1580	1780	3050	3400	3450	120
90	2080	2790	5570	3790	2760	1800	1540	1750	3020	3360	3410	90
60	2020	2710	5510	3680	2690	1750	1490	1700	2990	3330	3380	60
30	1960	2640	5450	3580	2610	1700	1450	1630	2950	3300	3350	30
0	1900	2560	5390	3470	2530	1660	1420	1530	2920	3260	3310	0

* Typical HOB

NOTE: PERSONNEL INJURY NORMALLY GOVERNS COLLATERAL DAMAGE CONSTRAINTS.

GUIDED MISSILE

GUIDED MISSILE

10 KT
(9-80)

COLLATERAL DAMAGE AVOIDANCE TABLES (Distances in meters)

10 KT
(9-80)

PERSONNEL INJURY [5% incidence]				MODERATE DAMAGE TO FACILITIES [5% incidence]					THERMAL IGNITION [threshold level]			
HOB	URBAN	RURAL	IN OPEN	SINGLE STORY FRAME BUILDING	SINGLE STORY MASONRY BUILDING	LT STEEL FRAME INDUST BLDG	FIXED BRIDGES	RAIL ROAD EQUIP	WOOD SHINGLES	DRAPES	NEWSPAPERS & DEBRIS	HOB
577	2510	3450	4590	4790	4410	2140	1870	990	2470	2930	3010	577
527	2480	3360	4600	4660	4330	2090	1810	1360	2490	2950	3030	527
452	2390	3220	4620	4450	4190	2000	1730	1490	2520	2970	3050	452
402*	2310	3130	4630	4300	4090	1940	1680	1510	2530	2980	3060	402*
352	2240	3020	4630	4140	3990	1880	1620	1520	2550	3000	3080	352
277	2120	2850	4640	3880	3830	1780	1540	1530	2560	3010	3090	277
227	2030	2730	4650	3710	3700	1710	1480	1520	2570	3020	3100	227
417	2330	3160	4620	4350	4120	1960	1700	1510	2530	2980	3060	417
367	2260	3050	4630	4190	4020	1900	1640	1520	2540	2990	3070	367
292	2140	2890	4640	3940	3860	1800	1550	1530	2560	3010	3090	292
242*	2060	2770	4650	3760	3740	1730	1500	1520	2570	3020	3100	242*
192	1970	2640	4650	3580	3620	1650	1400	1500	2580	3020	3100	192
177	1940	2600	4650	3530	3580	1630	1420	1490	2580	3030	3100	177
67	1710	2310	4450	3130	3280	1450	1270	1380	2450	2870	2950	67
0	1580	2120	4260	2880	3100	1350	1180	1210	2320	2730	2800	0

50 KT
(11-159)

COLLATERAL DAMAGE AVOIDANCE TABLES (Distances in meters)

50 KT
(11-159)

PERSONNEL INJURY [5% incidence]				MODERATE DAMAGE TO FACILITIES [5% incidence]					THERMAL IGNITION [threshold level]			
HOB	URBAN	RURAL	IN OPEN	SINGLE STORY FRAME BUILDING	SINGLE STORY MASONRY BUILDING	LT STEEL FRAME INDUST BLDG	FIXED BRIDGES	RAIL ROAD EQUIP	WOOD SHINGLES	DRAPES	NEWSPAPERS & DEBRIS	HOB
737	3990	5350	8690	7350	5300	3610	2920	2840	4100	4350	4370	737
687	3920	5250	8700	7200	5210	3550	2870	2860	4110	4360	4380	687
612	3810	5100	8710	6960	5050	3400	2780	2880	4130	4380	4400	612
562*	3730	5000	8720	6800	4950	3370	2730	2880	4150	4390	4410	562*
512	3650	4890	8720	6630	4840	3300	2670	2890	4160	4400	4420	512
437	3530	4710	8730	6370	4670	3190	2590	2880	4170	4420	4440	437
387	3440	4590	8730	6200	4550	3120	2530	2870	4180	4420	4450	387
464	3570	4740	8730	6460	4740	3230	2620	2890	4170	4410	4430	464
414	3490	4660	8730	6290	4620	3160	2560	2880	4180	4420	4440	414
339	3350	4470	8740	6030	4430	3040	2470	2840	4190	4430	4450	339
289*	3260	4340	8740	5860	4310	2960	2410	2810	4190	4440	4460	289*
239	3160	4210	8710	5680	4180	2870	2340	2760	4190	4430	4450	239
164	3010	4020	8640	5420	3980	2740	2240	2670	4160	4400	4430	164
114	2910	3840	8590	5240	3850	2650	2170	2610	4150	4390	4410	114
0	2680	3590	8470	4830	3550	2450	2010	2300	4100	4340	4360	0

* Preset HOB

NOTE: PERSONNEL INJURY NORMALLY GOVERNS COLLATERAL DAMAGE CONSTRAINTS.

GUIDED MISSILE

GUIDED MISSILE

100 KT
(11-218)

COLLATERAL DAMAGE AVOIDANCE TABLES
(Distances in meters)

100 KT
(11-218)

PERSONNEL INJURY [5% incidence]				MODERATE DAMAGE TO FACILITIES [5% incidence]				THERMAL IGNITION [threshold level]				
HOB	URBAN	RURAL	IN OPEN	SINGLE STORY FRAME BUILDING	SINGLE STORY MASONRY BUILDING	LT STEEL FRAME INDUST BLDG	FIXED BRIDGES	RAIL ROAD EQUIP	WOOD SHINGLES	DRAPES	NEWSPAPERS & DEBRIS	HOB
838	5130	6840	12500	9330	6790	4820	3770	3960	5230	5370	5350	838
788	5050	6740	12510	9170	6680	4750	3710	3980	5250	5380	5370	788
713	4930	6570	12520	8920	6520	4630	3620	3990	5270	5400	5390	713
663	4850	6460	12520	8740	6410	4560	3560	4000	5280	5410	5400	663
613	4770	6350	12530	8570	6300	4480	3510	4000	5290	5430	5410	613
538	4640	6160	12530	8300	6120	4360	3420	3980	5310	5440	5430	538
488	4550	6040	12540	8130	5990	4280	3360	3970	5320	5450	5430	488
614	4770	6350	12530	8570	6300	4480	3510	4000	5290	5430	5410	614
564	4680	6230	12530	8400	6180	4400	3450	3990	5300	5440	5420	564
489	4550	6040	12540	8130	5990	4280	3360	3970	5320	5450	5430	489
439	4450	5910	12540	7950	5870	4190	3300	3940	5330	5460	5440	439
389	4360	5780	12540	7770	5730	4100	3230	3910	5330	5460	5450	389
314	4200	5580	12550	7500	5530	3960	3130	3830	5340	5470	5460	314
264	4100	5440	12550	7320	5400	3860	3060	3770	5350	5480	5460	264
0	3550	4720	12540	6340	4680	3350	2680	3200	5350	5480	5470	0

• Preset HOB

NOTE: PERSONNEL INJURY NORMALLY GOVERNS COLLATERAL DAMAGE CONSTRAINTS.

MARK 50 BOMB

MARK 50 BOMB

3 KT
(7-46)

COLLATERAL DAMAGE AVOIDANCE TABLES

(Distances in meters)

3 KT
(7-46)

PERSONNEL INJURY [5% incidence]				MODERATE DAMAGE TO FACILITIES [5% incidence]					THERMAL IGNITION [threshold level]			
HOB	URBAN	RURAL	IN OPEN	SINGLE STORY FRAME BUILDING	SINGLE STORY MASONRY BUILDING	LT STEEL FRAME INDUST BLDG	FIXED BRIDGES	RAIL ROAD EQUIP	WOOD SHINGLES	DRAPES	NEWSPAPERS & DEBRIS	HOB
525	150n	21n0	266n	338n	217n	1340	9n0	0	1400	18n0	197n	525
475	151n	22n0	268n	331n	219n	13n0	1060	0	1430	19n0	199n	475
40n	157n	21n0	270n	315n	215n	1330	1150	3n0	1470	192n	201n	40n
35n*	154n	207n	271n	303n	207n	12n0	10n0	8n0	14n0	19n0	203n	350*
30n	148n	19n0	272n	289n	199n	1230	1040	870	1500	195n	204n	30n
225	138n	185n	273n	266n	184n	1140	970	8n0	1530	197n	206n	225
175	130n	175n	274n	249n	174n	1080	920	8n0	1540	198n	207n	175
395	157n	215n	270n	314n	214n	1330	1150	450	1470	193n	202n	395
345	153n	207n	271n	302n	206n	12n0	10n0	810	14n0	194n	203n	345
27n	144n	19n0	273n	280n	193n	1200	1020	8n0	151n	196n	205n	27n
22n*	137n	18n0	273n	264n	184n	1140	960	8n0	153n	197n	206n	22n*
18n	131n	174n	274n	251n	175n	1090	920	8n0	153n	19n0	207n	18n
95	126n	16n0	275n	222n	155n	9n0	830	850	155n	19n0	207n	95
45	123n	14n0	254n	204n	143n	8n0	770	8n0	141n	182n	191n	45
0	114n	13n0	232n	189n	132n	840	720	700	127n	165n	173n	0

10 KT
(9-80)

COLLATERAL DAMAGE AVOIDANCE TABLES

(Distances in meters)

10 KT
(9-80)

PERSONNEL INJURY [5% incidence]				MODERATE DAMAGE TO FACILITIES [5% incidence]					THERMAL IGNITION [threshold level]			
HOB	URBAN	RURAL	IN OPEN	SINGLE STORY FRAME BUILDING	SINGLE STORY MASONRY BUILDING	LT STEEL FRAME INDUST BLDG	FIXED BRIDGES	RAIL ROAD EQUIP	WOOD SHINGLES	DRAPES	NEWSPAPERS & DEBRIS	HOB
577	251n	345n	459n	479n	341n	2140	1870	990	247n	293n	301n	577
527	248n	33n0	460n	466n	333n	2090	1810	1360	249n	295n	303n	527
452	239n	32n0	462n	445n	319n	200n	1730	1490	252n	297n	305n	452
402*	231n	313n	463n	430n	309n	19n0	16n0	151n	253n	29n0	306n	402*
352	224n	30n0	463n	414n	299n	18n0	162n	152n	255n	30n0	30n0	352
277	212n	285n	464n	388n	283n	17n0	154n	153n	256n	301n	309n	277
227	203n	273n	465n	371n	270n	171n	14n0	152n	257n	302n	310n	227
417	233n	31n0	462n	435n	312n	1960	1700	151n	253n	29n0	306n	417
367	226n	305n	463n	419n	302n	1900	1640	152n	254n	29n0	307n	367
292	214n	28n0	464n	394n	286n	18n0	155n	153n	256n	301n	30n0	292
242n	206n	277n	465n	376n	274n	1730	150n	152n	257n	302n	310n	242*
192	197n	26n0	465n	358n	262n	1660	144n	150n	258n	302n	310n	192
177	194n	26n0	465n	353n	258n	1630	142n	149n	258n	303n	310n	177
67	171n	231n	445n	313n	228n	145n	127n	13n0	245n	287n	295n	67
0	158n	212n	426n	288n	210n	135n	11n0	121n	232n	273n	280n	0

* Preset HOB

NOTE: PERSONNEL INJURY NORMALLY GOVERNS COLLATERAL DAMAGE CONSTRAINTS.

MARK 50 BOMB

MARK 50 BOMB

100 KT
(11-218)

COLLATERAL DAMAGE AVOIDANCE TABLES
(Distances in meters)

100 KT
(11-218)

PERSONNEL INJURY [5% incidence]				MODERATE DAMAGE TO FACILITIES [5% incidence]					THERMAL IGNITION [threshold level]				
HOB	URBAN	RURAL	IN OPEN	SINGLE STORY FRAME BUILDING	SINGLE STORY MASONRY BUILDING	LT STEEL FRAME INDUST BLDG	FIXED BRIDGES	RAIL ROAD EQUIP	WOOD SHINGLES	DRAPES	NEWSPAPERS & DEBRIS	HOB	
83A	5130	6840	12500	9330	6790	4820	3770	3900	5230	5370	5350	838	
78A	5050	6740	12510	9170	6680	4750	3710	3980	5250	5380	5370	788	
713	4930	6570	12520	8920	6520	4630	3620	3990	5270	5400	5390	713	
663*	4850	6460	12520	8740	6410	4560	3560	4000	5280	5410	5400	663*	
613	4770	6350	12530	8570	6300	4480	3510	4000	5290	5430	5410	613	
53A	4640	6160	12530	8300	6120	4360	3420	3980	5310	5440	5430	538	
48A	4550	6040	12540	8130	5990	4280	3360	3970	5320	5450	5430	488	
614	4770	6350	12530	8570	6300	4480	3510	4000	5290	5430	5410	614	
564	4680	6230	12530	8400	6180	4400	3450	3990	5300	5440	5420	564	
484	4550	6040	12540	8130	5990	4280	3360	3970	5320	5450	5430	489	
430*	4450	5910	12540	7950	5870	4190	3300	3940	5330	5460	5440	439*	
389	4360	5780	12540	7770	5730	4100	3230	3910	5330	5460	5450	389	
314	4200	5580	12550	7500	5530	3960	3130	3830	5340	5470	5460	314	
264	4100	5440	12550	7320	5400	3860	3060	3770	5350	5480	5460	264	
n	3550	4720	12540	6340	4680	3350	2680	3200	5350	5480	5470	0	

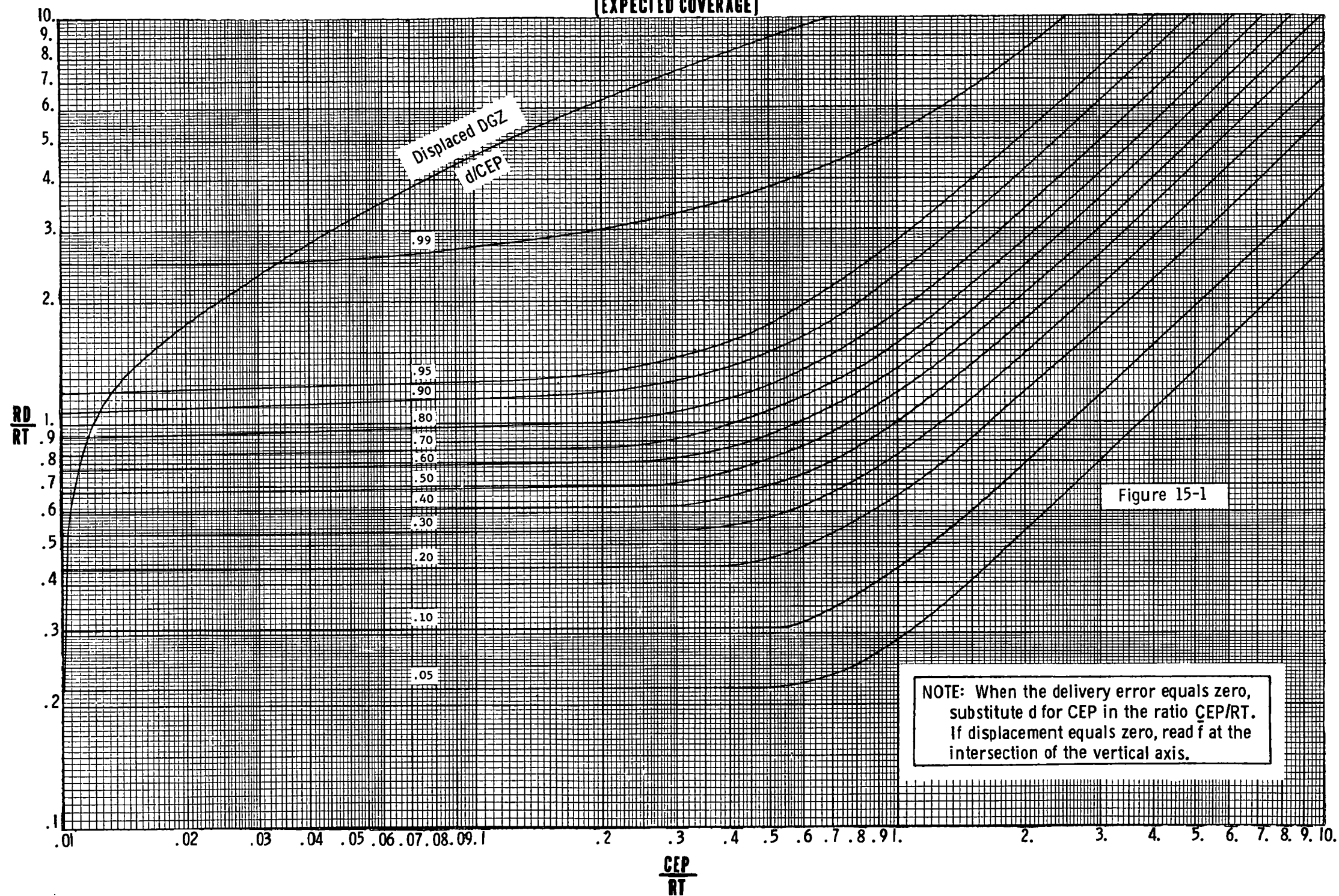
*Preset HOB

NOTE: PERSONNEL INJURY NORMALLY GOVERNS COLLATERAL DAMAGE CONSTRAINTS.

CHAPTER 15 GRAPHS AND TABLES

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AREA TARGET GRAPH (EXPECTED COVERAGE)



AREA TARGET GRAPH

(HIGH ASSURANCE COVERAGE)

GO TO POINT TARGET GRAPH

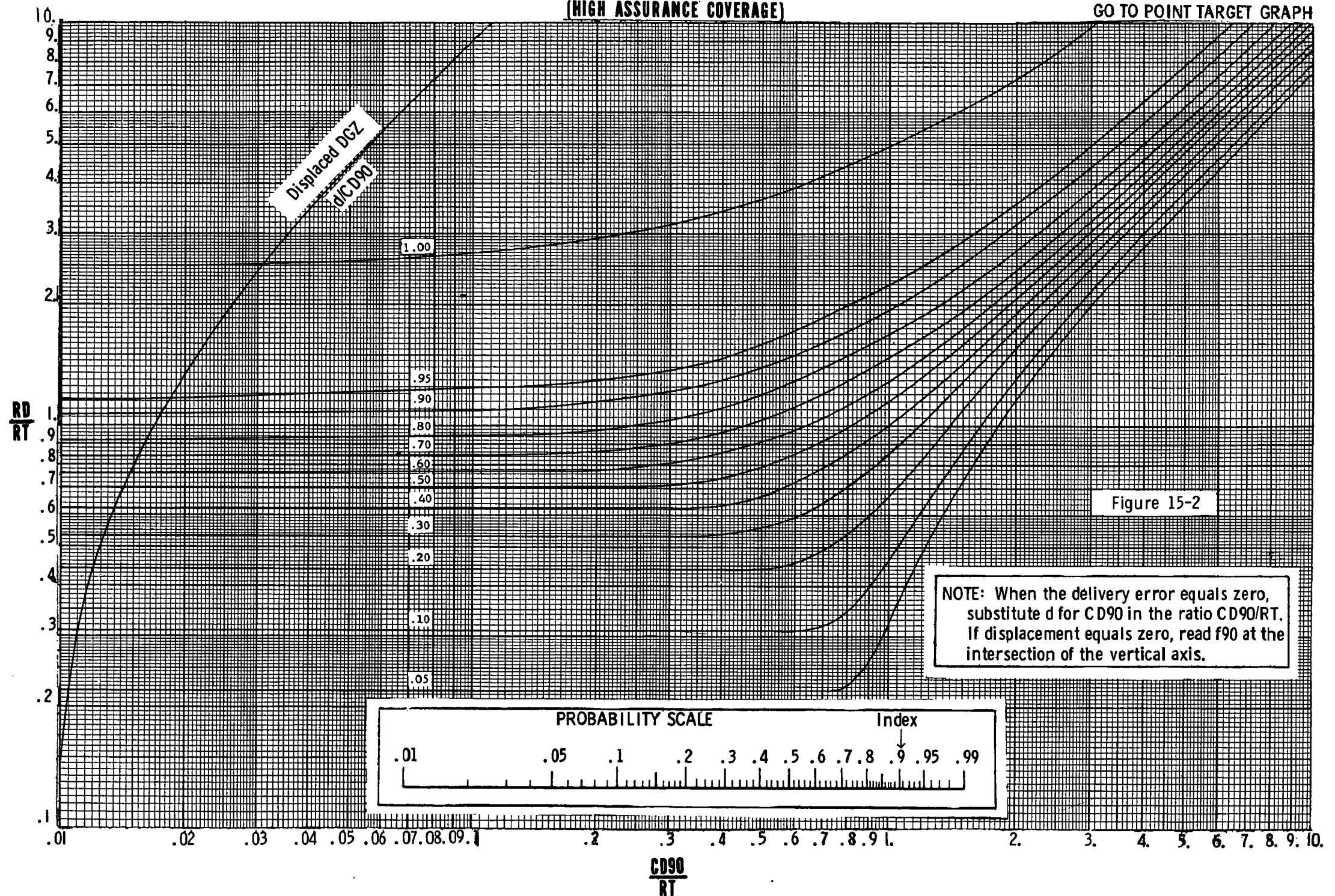
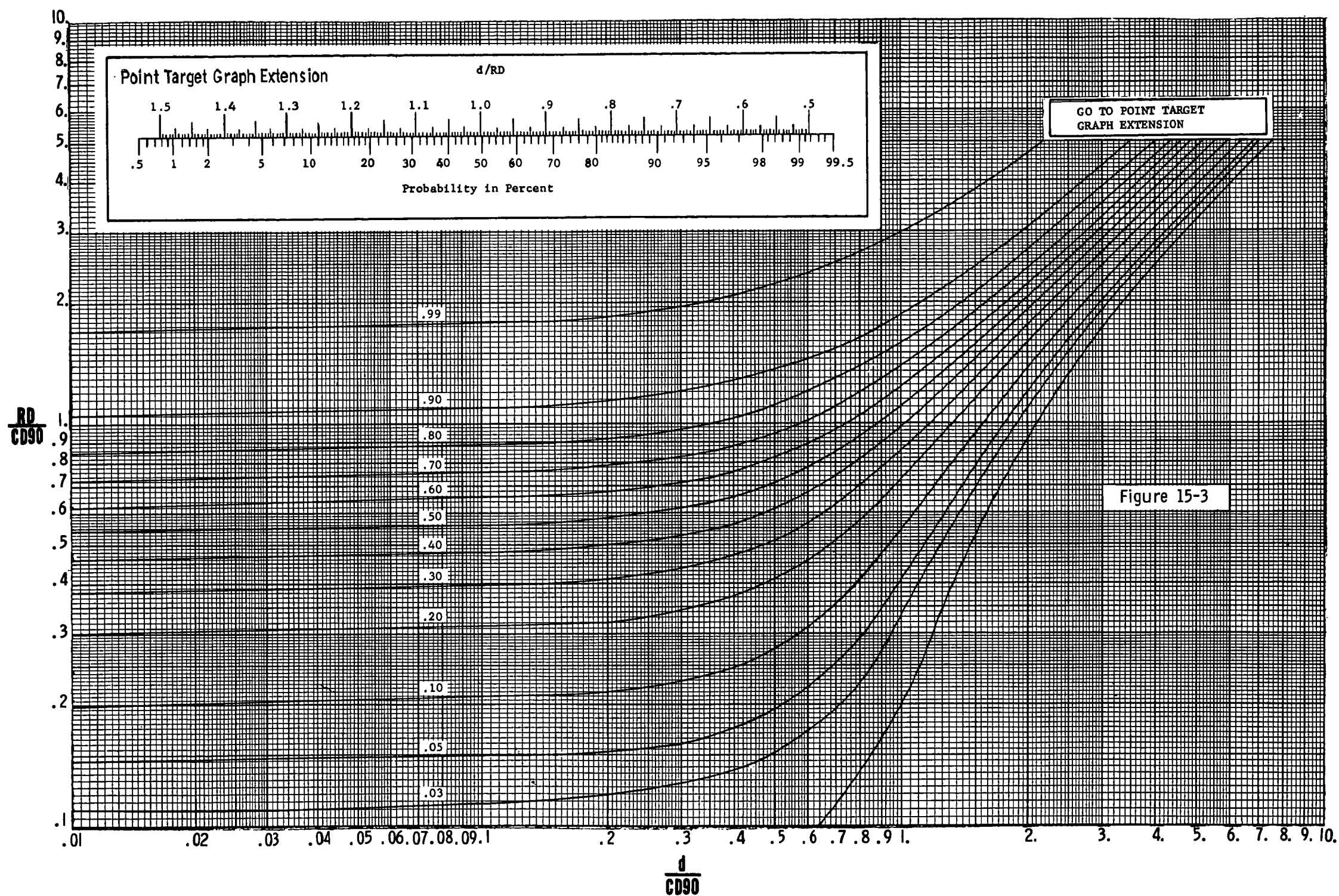


Figure 15-2

POINT TARGET GRAPH



RADI OF VULNERABILITY (Distances in meters)

Figure 15-4

Category Yield (KT)	CASUALTIES TO PERSONNEL IN						MODERATE DAMAGE						SEVERE DAMAGE		
	Open	Tanks	APC	Wheeled Vehicles	Earth Shelters	Fox-holes	Wheeled Vehicles		Towed Arty	Tanks, APC, SP Arty	Bridges		Supply Depots	Randomly Parked Helicopters	
							Exposed	Shld			Hard	Soft		Cgo/Trans	Obsn
1.0	1240	890	1010	1080	550	840	310	250	220	250	300	400	160	730	1230
2	2080	1220	1380	1480	790	1170	480	360	330	380	470	640	230	1060	1730
3	2630	1370	1550	1650	900	1320	590	420	420	470	580	800	280	1360	2330
5	3410	1550	1720	1830	1010	1470	750	500	540	610	720	1030	350	1680	2880
10	4490	1680	1900	2040	1160	1680	1020	640	740	820	1010	1470	480	2160	3730
20	5540	1710	1940	2100	1230	2020	1290	770	920	1040	1240	1740	620	2630	4560
50	8350	1990	2230	2430	1480	2860	1950	1100	1390	1560	1711	2410	960	3700	6260
100	12000	2130	2400	2640	1700	3770	2710	1460	1960	2210	2610	3270	1350	4850	8230

COMPARABLE TARGET TABLE

Figure 15-5

PRIMARY TARGET SECONDARY TARGET			Exposed Personnel LL	Personnel In Open Foxholes IT	Personnel In Tanks IT	Moderate damage To Tanks	Moderate damage To Towed Artillery	Moderate damage To Wheeled Vehicles
Factories (25-50 ton Crane Capacity)	All Yields	Severe Damage				●		
Fixed Bridges	≤ 55 KT	Severe Damage					●	
Floating Bridges	< 55 KT	Severe Damage					●	
Missiles/Rockets In Open	All Yields	Severe Damage						●
Railroad Boxcars and Flat Cars (loaded)	All Yields	Severe Damage						●
Tracked Vehicles (not tanks)	All Yields	Severe Damage					●	
Heavy and Self-Propelled Artillery	All Yields	Moderate Damage				●		
Personnel in Brick Apartment Buildings	< 55 KT	LL	●					
	≤ 10 KT	IP			●			
Personnel in APC	All Yields	IP		●				
Personnel in Earth Shelters	All Yields	LL		●				

METHODOLOGY FOR OBTAINING OTHER COMPARABLE TABLES

1. The radius of damage for the secondary targets will equal or exceed the radius of damage for the primary target. The coverage for the secondary target will be at least that shown for the corresponding primary target.
2. For secondary targets that have not been tabulated, there is no general relationship between the secondary target response function and a primary target response function. However, there is a methodology with which an approximate coverage can be obtained for some of these secondary targets. If more accurate target analysis is required, the numerical method should be used.

The procedure is outlined below:

- a. From a coverage table of the weapon system and yield being analyzed, determine the height of burst for the gun/launcher-target range.
- b. Use the effects tables to determine the desired radius of damage for the secondary target using the height of burst just selected.
- c. Find the radius of damage for a primary target that comes closest to the secondary radius of damage. (Stay at the same height of burst, yield and system.) For radiation sensitive secondary targets, use only radiation primary targets and for blast sensitive targets, use only blast primary targets.
- d. Enter the coverage table for the primary target category selected and for the radius of target in question, read the appropriate coverage. (If the primary target radius of damage used is less than that of the secondary target, then the coverage to the secondary target will be at least that of the primary target. If the primary target radius of damage used is greater than that of the secondary target, then the coverage to the secondary target will be at most that of the primary target.)

RESIDUAL RADIATION TRANSMISSION FACTORS
FOR US EQUIPMENT

M41 Tank	0.1
M60 Tank	0.04
M60A2 Tank	0.03
M48A2 Tank	0.02
M59 APC	0.2
M113 APC	0.3
M116 Cargo Carrier	0.6
M548 Cargo Carrier	0.7
M577 Command Post Carrier	0.3
M108 SP Howitzer	0.3
M109 SP Howitzer	0.2
M110 SP Howitzer	0.4
M106 SP Mortar	0.3
M125A SP Mortar	0.3
M107 SP Gun	0.4
M114 Reconnaissance Vehicle	0.3
M88 Recovery Vehicle	0.09
M578 Recovery Vehicle	0.3
M20 Combat Engineer Vehicle	0.04
M551 Armored Reconnaissance/ Airborne Assault Vehicle	0.2

Figure 15-6

RADII OF INDUCED CONTAMINATION

Estimated 2 Rad/Hr Dose Rate at H + 1 Hr
Yield Horizontal Radius

0.1	KT	200 meters
1	KT	700 meters
10	KT	1000 meters
100	KT	1600 meters
1000	KT	2000 meters

NOTE: To determine the approximate distance from ground zero at which radiation measuring instruments should be used, enter the above table at the nearest listed yield.

Figure 15-7

MSD MODIFICATION AS A FUNCTION OF PREVIOUS EXPOSURE

Radiation Exposure State	Total Past Cumulative Dose (rad)	Commanders Risk Guidance		
		Negligible	Moderate	Emergency
RES-0	0	NEG	MOD	EMER
RES-1	> 0, ≤ 70	NEG + 100m	NEG	MOD
RES-2	> 70, ≤ 150	NEG + 200m	NEG+100m	NEG
RES-3	> 150	NEG + 300m	NEG+200m	NEG+ 100m

Figure 15-8

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APPENDIX A

REFERENCES

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3. _____. Field Manual 5-26: Employment of Atomic Demolition Munitions (ADM). Washington: August 1971.
4. _____. Field Manual 5-36G: Route Reconnaissance and Classification. Washington: 20 January 1970.
5. Germond, H. H. The Circular Coverage Function. RAND Memorandum 330. Santa Monica: 1950.
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7. Cooke, B. H., Major. Working Paper, "Calculation of Thermal Risk Distances." United Kingdom Army: 22 April 1974.
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APPENDIX B

DUAL FUZING CONSIDERATIONS

General. A timer fuze and a variable time (VT) fuze operate in parallel for medium to maximum range airbursts with the Free Flight Rocket warhead. At short ranges, only the timer fuze operates. This multiple fuzing arrangement improves the effectiveness of this weapon system at the medium and longer ranges. This section presents a discussion of the factors involved in the employment of the dual fuze.

a. Fuzing system description.

(1) A timer fuze operates throughout the trajectory of the Free Flight Rocket system. Whenever the timer fuze sends a burst command to the warhead, the warhead will detonate.

(2) After 39 seconds and before 40 seconds time of flight, the VT fuze becomes operable. The VT and timer fuze then operate in parallel. The fuze which operates first will detonate the warhead.

(3) There is no option of selecting either the timer or VT fuze alone. The changeover from timer only to dual fuzing is accomplished automatically by the fuzing system.

(4) Troop safety and fallout preclusion considerations require that the nuclear weapons employment officer consider that the VT fuze becomes ready to operate at 40 seconds. This is the basis on which the Free Flight Rocket coverage and safety tables have been developed.

b. The Effectiveness of Dual Fuzing.

(1) Dual fuzing was devised to increase the damage expectancy on a target at those ranges where the Free Flight Rocket delivery system, using timer fuzing alone, has large vertical errors. When a fallout safe airburst is desired, these large vertical errors significantly reduce the probability of the burst being low enough to produce satisfactory damage radii in the target area. Dual fuzing is more effective than timer or VT fuzing alone, particularly at medium ranges, and it increases the effective range of Free Flight Rocket delivered nuclear warheads.

(2) The increase in effective range is achieved through the use of a special HOB setting for the timer fuze, while relying on the VT fuze to provide for the preclusion of fallout. The special timer HOB setting is influenced by the timer PEH, the timer PER, and the VT PER. The timer HOB, therefore, vary significantly with range. For a specific range, the special timer HOB setting varies with the yield, the "hardness" of the target, and the size of the target.

c. Dual Fuzing Burst Patterns.

(1) Viewed in a vertical plane through the axis of the trajectory, the burst patterns of the timer and VT fuzes, acting alone, are shown in Figure B-1. The VT pattern is considerably narrower and more elongated than the timer pattern. Note that the VT fuze pattern extends farther horizontally than the timer fuze pattern (the magnitude of this extension depends upon the angle of fall of the rocket).

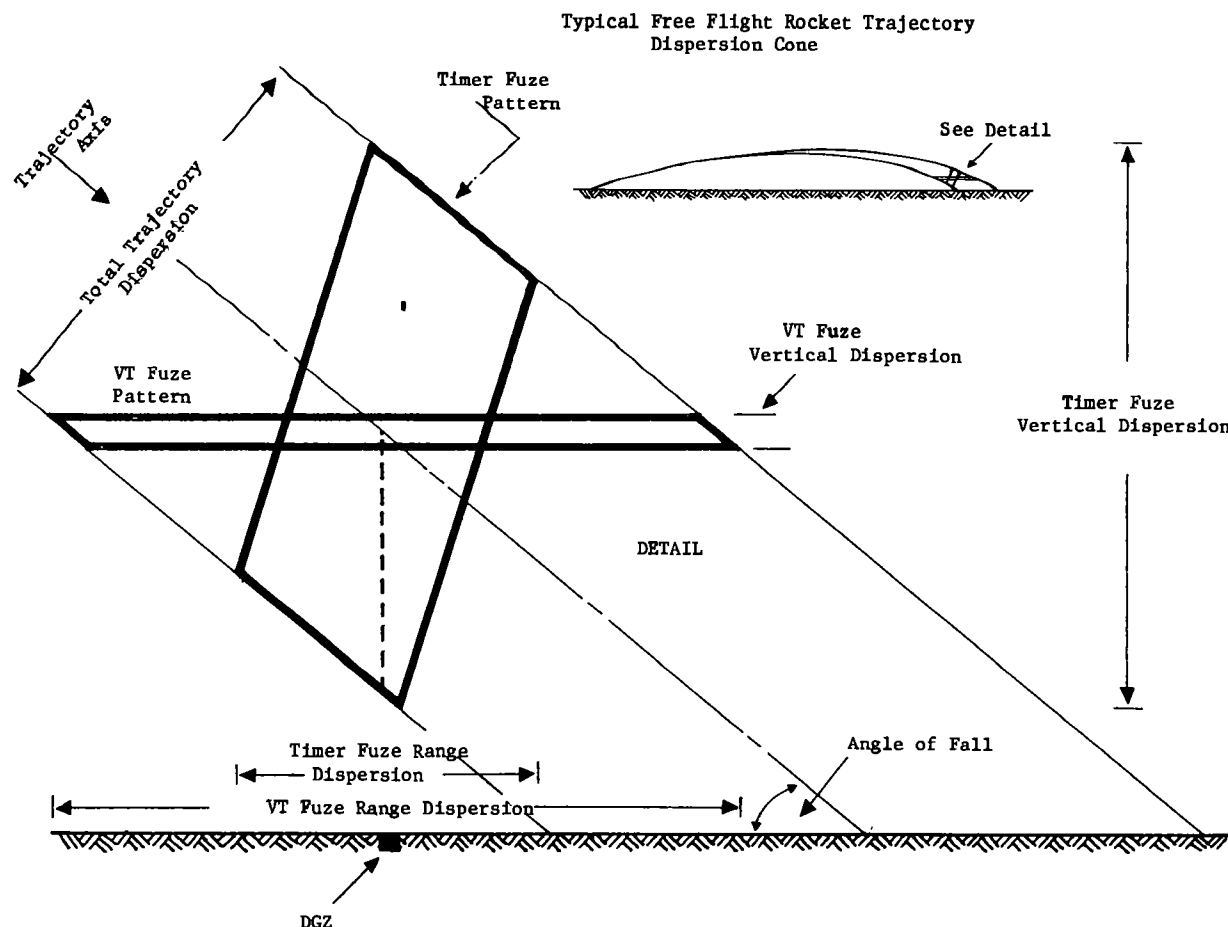


Figure B-1. Burst Patterns

(2) Figure B-1 shows the relationship of the VT fuze and timer fuze burst patterns. Both patterns are shown centered on the same HOB and point in space without reference to the preset VT HOB setting. For simplicity in the following figures, it is assumed that the 4 PE each side of center include the total dispersion.

(3) The location of the rocket path in the dispersion cone of the trajectory and the difference between the timer fuze setting and the VT fuze setting determine whether the detonation is caused by the timer fuze or the VT fuze. Figure B-2 shows a dual fuzing burst pattern. In this example, both fuzes are set for the same height of burst. Note that the VT fuze would detonate those weapons which would otherwise impact or be detonated in the lower portions of the timer fuze airburst pattern. This action of the VT fuze causes the lower portion of the combined fuzing burst pattern to flatten out and elongate in the direction of the launching site. This elongation significantly extends the possible horizontal error of the burst. The elongation of the burst pattern varies with the angle of fall of the rocket (range) and with the difference between the timer and VT HOB settings. At the shorter ranges, where the angle of fall is small (as illustrated in Figure B-2), an increase in the probability of a VT burst increases the elongation of the expected pattern. In order to center the burst pattern over the Desired Ground Zero (DGZ), the delivery unit automatically adds a "range offset" to the launcher-target range in calculating firing data.

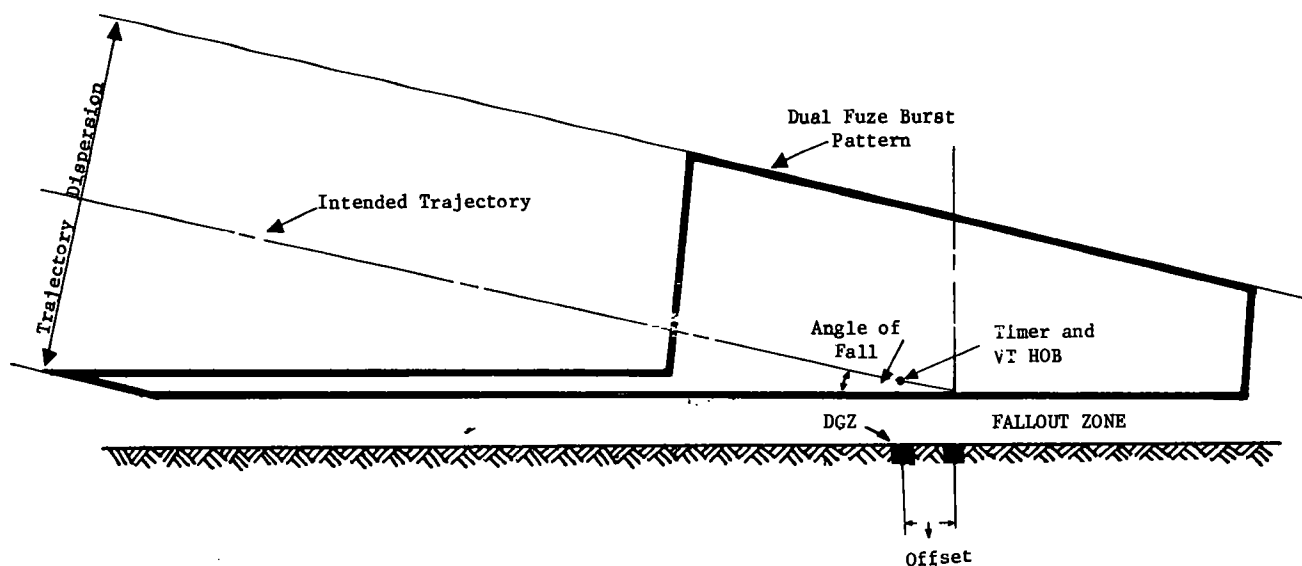


Figure B-2. Dual Fuzing Burst Pattern, Near-Minimum Range.

(4) As the range increases, the timer vertical and range errors increase, while the VT range error decreases. (VT vertical error remains constant.) This progressive change in the three probable errors continues out to maximum range.

(a) Selection of the special HOB setting for the timer fuze involves:

1. Avoiding the larger VT range error at the beginning of the dual fuzing range.
2. Avoiding the larger timer vertical error at the longer ranges.
3. Selecting the best combination of these errors for the ranges in between these extremes. This combination considers the requirement to hit the target (influenced by range errors) while achieving an acceptable radius of damage (influenced by vertical errors).

(b) Figure B-3 illustrates the relative size and shape of the dual fuzing burst pattern at an intermediate range where the timer fuze HOB is calculated to be below ground level at the target. In this case, most rounds will burst on signal from the VT fuze. Note that the elongation of the lower portion of the pattern is significantly less than the elongation at the shorter range.

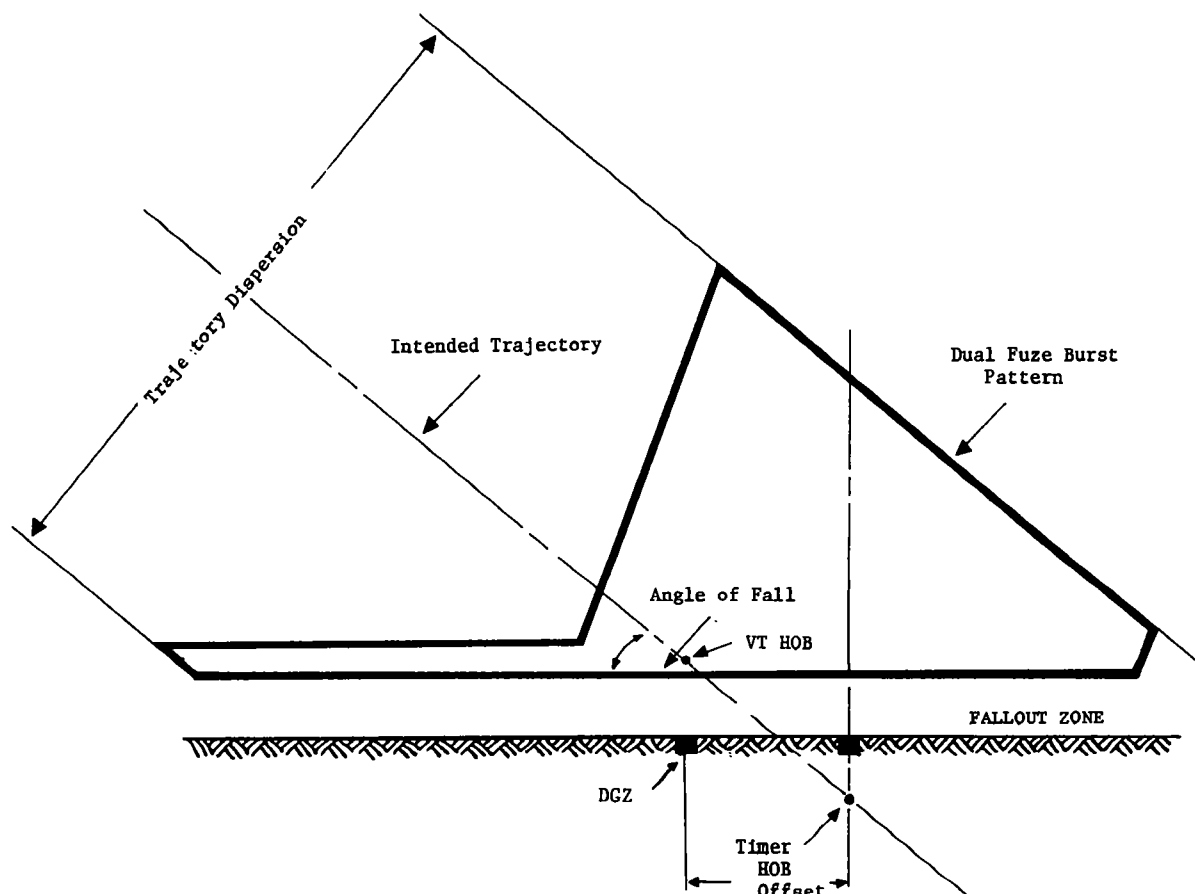


Figure B-3. Dual Fuzing Burst Pattern, Intermediate Range.

(5) Figure B-4 illustrates the combined fuzing burst pattern expected at near-maximum range with the timer fuze HOB calculated to be well below ground level at the target. Note that at this range the elongation of the burst pattern toward the launching site is small and that, as shown by Figure B-1, the vertical dispersion is greatly reduced when compared with the burst pattern produced by the timer fuze alone.

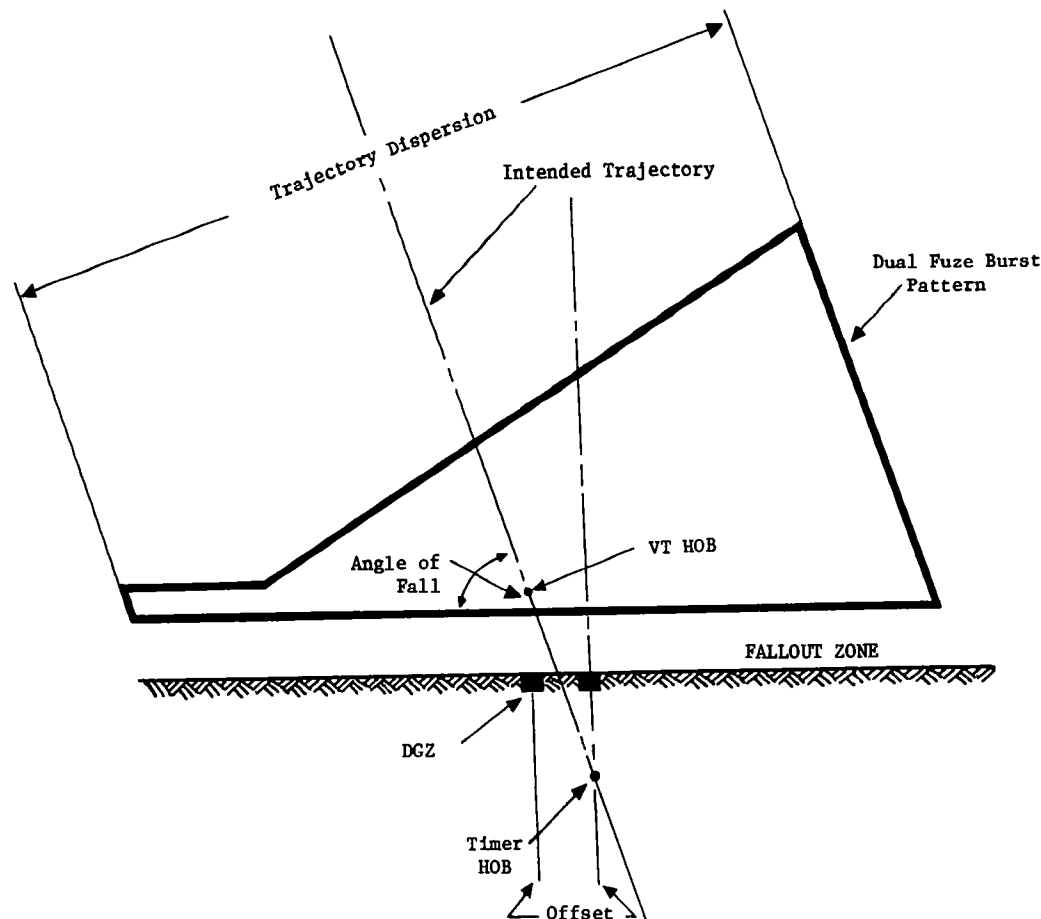


Figure B-4. Dual Fuzing Burst Pattern, Near-Maximum Range.

(6) At the longer ranges, it is desirable to detonate the weapon only by the VT fuze. However, the design of the parallel fuzing limits the distance the timer fuze can be set below the VT.

(7) The special timer HOB setting for each range has been precomputed and used in the computation of the Coverage and Safety Tables. These HOB have been computed using the following formulae:

Table B-1. FREE FLIGHT Rocket

Yield(KT)	VT HOB (Fixed)	Timer HOB
5.0	230m	500 meters minus 10 times range in kilometers.
20.0	260m	550 meters minus 10 times range in kilometers.

d. Coordination Procedures When Employing Dual Fuzing.

(1) Different procedures are established for coordination between the fire support element (FSE) and fire direction center (FDC) for each of the three situations that exist when a dual fuzing system is employed. These three situations are:

- Relatively short ranges at which timer fuze only is operable.
- Relatively long ranges at which timer fuze and VT fuze operate in parallel.
- Crossover ranges at which either timer fuze only or dual fuze may operate.

(2) When the weapon is being fired at a range where only the timer fuze is expected to operate (time of flight less than 40 seconds), the artillery fire direction center is given the desired height of burst above DGZ in meters, and the FDC computes the firing data without considering the range offset.

(3) When the weapon is fired at a range where the timer fuze and the radar fuze are expected to operate in parallel (time of flight greater than 40 seconds), the FDC determines the range offset and the timer height of burst from appropriate tables. The firing data are computed using the range to target plus range offset and timer height of burst.

e. Precautions When Employing Dual Fuzing. A possible hazardous situation exists when employing systems with dual fuzing. Suppose the estimated time of flight for Free Flight Rocket is calculated to be 40.2 seconds. Errors in the determination and application of ballistic factors, especially air density and upper winds, could cause the actual time of flight to be less than 40 seconds, for example, 39.8 seconds.

(1) In this example, the analyst would select the HOB for the dual fuze. Because of the shorter time of flight to the target resulting from an error in ballistic correction, the VT element of the fuze might not operate. The HOB for the timer element is considerably lower than that required for a very high assurance of no fallout with timer only. The change in time of flight substantially increases the probability of fallout.

(2) It is desirable to seek times of flight which are not close to the expected fuze crossover point. This can be done by selecting launcher positions which will provide times of flight not close to 40 seconds. Changes in times of flight due to uncorrected low-level wind variations of the intensities likely to be encountered in a tactical firing are ignored due to the lack of a feasible method of correcting them.

f. A 90% HOB bracket has been included in the Coverage Tables for those ranges where either fuze may function. This bracket represents the vertical space within which a round has a 90% probability of bursting. These data may be used when analyzing a situation not covered by this manual to determine a probable RD.

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APPENDIX C

BLACKOUT EFFECTS OF NUCLEAR DETONATIONS ON RADIO COMMUNICATIONS AND RADAR TRANSMISSION/RECEPTION

1. Tactical commanders should be aware that the fireball and dust clouds resulting from a nuclear burst may degrade or completely interrupt the operation of their radio communications systems and radars without doing physical harm to their equipment. This interference results from:
 - a. Absorption or changes in the characteristics of electromagnetic (EM) waves from a communications transmitter or radar set as a result of their interaction with the fireball or dust cloud.
 - b. EM radiation from the fireball being picked up by the receiver.
2. The durations of these effects are of chief interest and are summarized in Table C-1 for communications systems. Interference from low altitude bursts may last from a few seconds to a few minutes for most communications systems. That produced by high altitude bursts may range from a few seconds to hours. The duration of such interference for radar systems is comparable.
3. Increasing transmitter power or the use of alternate routing may be employed to mitigate blackout effects to radio communications. Alternate routing may be difficult since communications traffic is apt to be very heavy during the time of nuclear conflict. When a frequency is blacked out in a system that can transmit at several frequencies, other frequencies should be tried.

BURST REGION	MODE OF PROPAGATION	FREQUENCY BANDS	BLACKOUT SOURCE	ESTIMATED DURATION OF BLACKOUT
Near Surface	Line of Sight	VHF, UHF, SHF	Dust/Fireball	Few seconds to few minutes.
Near Surface	Satellite Relay	UHF, SHF	Dust/Fireball	Few seconds to tens of seconds.
Low Altitude	Troposcatter	UHF, SHF	Dust/Fireball	Few seconds to tens of seconds.
Low Altitude	HF Groundwave, Skywave	HF, VHF	Fireball	Negligible to few seconds.
Low Altitude	Satellite Relay	UHF, SHF	Dust/Fireball	Few seconds to tens of seconds.
High Altitude	Troposcatter	UHF	Ionized Region	Few seconds to minutes.
High Altitude	HF Skywave	HF	Ionized Region	Minutes to many hours.
High Altitude	Satellite Relay	UHF, SHF	Ionized Region	Few minutes to hours.

Table C-1. Blackout of Radio Communications Due to Nuclear Bursts

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APPENDIX D

VULNERABILITY OF ARMY TACTICAL EQUIPMENT TO EMP

1. In addition to casualties and equipment damage caused by initial radiation, blast and thermal radiation, a unit may receive damage to some of its electrical and electronic equipment due to the effects of electromagnetic pulse (EMP). A brief description of EMP effects is contained in Appendices B and C of FM 101-31-1.
2. Because of the uncertainties involved, EMP is not considered a reliable kill mechanism for targeting purposes; however, EMP effects can be significant for friendly unit vulnerability and damage preclusion considerations.
3. Army tactical equipment which is vulnerable to EMP can be divided into four categories based on the vulnerability of the equipment. These categories and associated vulnerabilities are given in Table D-1. Table D-2 gives the probable safe radii and probable damage radii for low air/surface bursts as a function of yield for the two most vulnerable categories of equipment contained in Table D-1. Such information is not provided for the other categories of equipment since it is expected that such equipment will be damaged or operating crews will be incapacitated due to exposure to initial radiation, blast, or thermal radiation from a nuclear burst at greater ranges than those at which the equipment would be damaged by EMP effects.
4. The information given in Tables D-1 and D-2 has been based on a simplification of the technical problems associated with EMP vulnerability assessments. They are included for information only and are not to be used for targeting analyses.

Table D-1. Equipment Vulnerability Categories

Equipment Categories	Probability of Damage	Equipment Included in Category
I	Very low	Artillery, tactical equipment (excluding commo equipment).
II	Low	Fire direction control equipment, nuclear warheads, missiles.
III	Medium	Long range communications equipment (greater than 100 km), air defense radars.
IV	High	Target acquisition radars, short range communications equipment (less than 100 km), command and control equipment.

Table D-2. EMP Vulnerability for Surface/Low Air Bursts

Yield (KT)	Category III Equipment		Category IV Equipment	
	Probable Safe Radii	Probable Damage Radii	Probable Safe Radii	Probable Damage Radii
1.0	1570m	*	2270m	1570m
2.0	2070m	*	4230m	2070m
3.0	2390m	*	5150m	2390m
5.0	2630m	*	5600m	2630m
10.0	3050m	*	6300m	3050m
20.0	3060m	*	6560m	3060m
50.0	3410m	*	7610m	3410m
100.0	3890m	*	8830m	3890m

*Radii would be determined by initial radiation, blast, or thermal radiation effects.



APPENDIX E
SIMPLIFIED REFERENCE DATA
CASUALTY AND DAMAGE RADII TABLE
(Distances in meters)

Delivery System	Yield (KT)	EXPOSED PERSONNEL			PERSONNEL IN FOXHOLES			PERSONNEL IN TANKS			MODERATE DAMAGE TO MATERIEL		
		Immed Perm	Immed Trans	Lat Leth	Immed Perm	Immed Trans	Lat Leth	Immed Perm	Immed Trans	Lat Leth	Medium Tanks	Wheeled Vehicles	Towed Arty
Short Range Cannon	0.2	260	350	510	160	240	380	190	270	420	40	70	30
Short Range Cannon	1.0	460	580	800	310	420	610	360	470	660	90	170	60
Medium Range Cannon	2.0	630	790	1060	440	580	830	490	640	880	180	290	120
Medium Range Cannon	8.0	910	1130	1480	670	860	1170	730	920	1220	490	650	380
Free Flight Rocket	5.0	770	970	1310	520	700	1020	580	770	1070	190	360	110
Free Flight Rocket	20.0	930	1140	1490	660	850	1180	720	910	1220	560	820	420
Guided Missile	10.0	900	1110	1460	640	830	1150	700	890	1200	430	640	300
Guided Missile	50.0	1100	1320	1690	810	1010	1350	860	1060	1380	1060	1350	870
Guided Missile	100.0	1230	1440	1840	860	1090	1470	910	1130	1480	1440	1860	1140
MARK 50 Bomb	3.0	700	880	1180	470	640	920	540	700	970	150	290	90
MARK 50 Bomb	10.0	900	1110	1460	640	830	1150	700	890	1200	430	640	300
MARK 50 Bomb	100.0	1230	1440	1840	860	1090	1470	910	1130	1480	1440	1860	1140

1. Thermal effects are not considered in computing radii of damage or casualties.
2. Low air height of burst is used.
3. Radii are expected values based on 2/3 system range.

SAFETY RADII TABLE
(Distances in meters)

Delivery System	YIELD (KT)	UNWARNED, EXPOSED PERSONNEL			WARNED, EXPOSED PERSONNEL			PROTECTED PERSONNEL			BUFFER DISTANCE
		NEG	MOD	EMERG	NEG	MOD	EMERG	NEG	MOD	EMERG	
Short Range Cannon	0.2	1040	950	710	850	810	710	730	650	550	150
Short Range Cannon	1.0	2390	2210	1280	1360	1230	1040	1480	1310	830	150
Medium Range Cannon	2.0	3770	3510	2160	2210	2020	1520	2150	1900	1110	200
Medium Range Cannon	8.0	7390	6820	4380	4280	3980	3140	3410	3010	1530	200
Free Flight Rocket	5.0	5870	5430	3530	3490	3230	2490	2980	2630	1380	800
Free Flight Rocket	20.0	10470	9550	5760	5440	5030	4020	4340	3830	1550	800
Guided Missile	10.0	7970	7310	4650	4510	4190	3330	3890	3440	1520	1000
Guided Missile	50.0	15920	14600	8740	7890	7230	5590	6020	5320	2180	1000
Guided Missile	100.0	21810	20160	12540	11040	10120	7530	8150	7210	2960	1000
MARK 50 Bomb	3.0	4630	4330	2730	2760	2530	1930	2630	2330	1240	500
MARK 50 Bomb	10.0	7970	7310	4650	4510	4190	3330	3890	3440	1520	500
MARK 50 Bomb	100.0	21810	20160	12540	11040	10120	7530	8150	7210	2960	500

1. Low air height of burst is used.
2. Buffer distances are 2.0 CEP or 3.5 PE larger at 2/3 system range, rounded up to nearest 50 meters. For the bomb, a CEP of 250 meters was assumed.
3. Safety yields were used for calculations.
4. Safety radii do not consider vertical dispersion.

COLLATERAL DAMAGE AVOIDANCE RADII TABLE

(Distances in meters)

Delivery System	PERSONNEL INJURY				MODERATE DAMAGE TO FACILITIES					THERMAL IGNITION		
	Yield (KT)	Urban	Rural	In Open	Single-story Frame Bldg	Single-story Masonry Bldg	Lt. Steel Frame Indust. Bldg	Fixed Bridges	Rail-road Equip	Wood Shingles	Drapes	Newspapers & Debris
Short Range Cannon	0.2	560	680	710	710	490	290	230	200	320	530	580
Short Range Cannon	1.0	850	1020	1280	1520	1020	630	520	460	760	1070	1140
Medium Range Cannon	2.0	1140	1480	2160	2160	1480	920	770	710	1220	1630	1720
Medium Range Cannon	8.0	1810	2430	4380	3310	2410	1530	1330	1390	2440	2910	2990
Free Flight Rocket	5.0	1570	2110	3530	2940	2090	1310	1120	1120	1960	2410	2500
Free Flight Rocket	20.0	2310	3100	5760	4200	3070	1990	1700	1870	3120	3470	3520
Guided Missile	10.0	2060	2770	4650	3760	2740	1730	1500	1520	2570	3020	3100
Guided Missile	50.0	3260	4340	8740	5860	4310	2960	2410	2810	4190	4440	4460
Guided Missile	100.0	4450	5910	12540	7950	5870	4190	3300	3940	5330	5460	5440
MARK 50 Bomb	3.0	1370	1840	2730	2640	1840	1140	960	880	1530	1970	2060
MARK 50 Bomb	10.0	2060	2770	4650	3760	2740	1730	1500	1520	2570	3020	3100
MARK 50 Bomb	100.0	4450	5910	12540	7950	5870	4190	3300	3940	5330	5460	5440

1. Low air height of burst is used.
2. Safety yields were used for calculations.
3. Collateral damage avoidance radii do not consider vertical dispersion or horizontal buffer distances.

NOTE: Personnel injury normally governs collateral damage constraints

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